

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.



Department of
Agriculture



Forest Service

Forest Pest
Management

Washington, DC

FOURTH REPORT

NATIONAL STEERING COMMITTEE FOR MANAGEMENT OF VEGETATION ON FOREST AND RANGE ECOSYSTEMS

Pesticides used improperly can be injurious to human beings, animals, and plants. Follow the directions and heed all precautions on labels. Store pesticides in original containers under lock and key—out of the reach of children and animals—and away from food and feed.

Apply pesticides so that they do not endanger humans, livestock, crops, beneficial insects, fish, and wildlife. Do not apply pesticides where there is danger of drift when honey bees or other pollinating insects are visiting plants, or in ways that may contaminate water or leave illegal residues.

Avoid prolonged inhalation of pesticide sprays or dusts; wear protective clothing and equipment, if specified on the label.

If your hands become contaminated with a pesticide, do not eat or drink until you have washed. In case a pesticide is swallowed or gets in the eyes, follow the first aid treatment given on the label, and get prompt medical attention. If a pesticide is spilled on your skin or clothing, remove clothing immediately and wash skin thoroughly.

NOTE: Some States have restrictions on the use of certain pesticides. Check your State and local regulations. Also, because registrations of pesticides are under constant review by the U.S. Environmental Protection Agency, consult your local forest pathologist, county agriculture agent, or State extension specialist to be sure the intended use is still registered.



FPM 94-17

August 31, 1994

FOURTH REPORT

National Steering Committee
for Management of Vegetation
on Forest and Range Ecosystems



Complied by:

David F. Thomas, Chair, WO-FPM
Mike Rutty, Stanislaus, R-5

U.S.D.A. Forest Service
FPM - AB-2S
P.O. Box 96090
Washington, D.C. 20090-6090
(202) 205-1600
(202) 205-1130 (FAX)



Healthy Forests
Make A World
Of Difference

CONTENTS

I.	INTRODUCTION	
	Table of Contents	2
	A. Committee Members in Attendance	3
	B. Committee Meeting Notes by Mike Rutty	4
	C. Proposed Revised Committee Charter and Purpose	5
	D. Committee Member Reports on Current Vegetation Management Activities	5
II.	RECOMMENDATIONS AND ACTIONS - Priorities for Committee	10
	A. Committee Actions	10
	B. Recommendations/Action - High, Medium, and Low Priorities . .	10
III.	RESEARCH NEEDS IN VEGETATION MANAGEMENT	15
IV.	ADDRESSES OF COMMITTEE MEMBERS	16
V.	AGENDA	A
VI.	APPENDIX	
	A. Committee Member Reports	
	B. Committee Member Addresses	
	C. Federal Advisory Committee Act	
	D. "The Role of Low Impact Herbicide Treatments in Ecosystem Management," By McMahon, Miller, and Thomas	
	E. Fiscal year 1993 Annual Pesticide-Use Report	
	F. Pesticide-Use, Management and Coordination Strategic Plan	
	G. Membership of All National Steering Committee Sponsored by Forest Pest Management	

A. Committee Members in Attendance

<u>Name</u>	<u>Address</u>	<u>Phone Number</u>	<u>DG Address</u>
Dave Thomas	WO-FPM	(202) 205-1600	D.Thomas:W01C
Charlie McMahon	SO	(205) 826-8670	C.McMahon:S30A
Paul Mistretta	R-8	(404) 357-2961	P.Mistretta:R08A
Ed Holsten	R-10	(907) 271-2573	E.Holsten:R10F04A
George Ice	NCASI	(503) 752-8801	N/A
Bob Cambell	Canadian FS	(705) 946-9461	N/A
Garth Baxter	R-4	(801) 782-6884	N/A (Retired)
Alison Corey	R-4	(801) 625-5258	A.Corey:R04A
Frank Burch	WO-TM	(202) 205-0946	F.burch:W01C
Mike Ruty	R-5	(209) 532-3671	M.Ruty:R05F16A
Doug Parker	R-3	(505) 821-7739	D.Parker:R03A



Left to Right: Ed Holsten, Region 10; Charlie McMahon, Southern Station; Garth Baxter, Region 4 (retired); Bob Cambell, Canadian Forest Service; Alison Corey, Region 4; Mike Ruty, Region 5; Paul Mistretta, Region 8; Dave Thomas, Washington Office (Chair); Frank Burch, Washington Office, TM;

Not Pictured, but in attendance: George Ice, NCASI, Corvallis, Oregon;
Doug Parker, Region 4 (visitor):

Unable to attend: Phil Aune, PSW; Ed Monnig, R-1; Doug Stone, NC Station:

B. Committee Meeting Notes by Mike Rutty

[Editors Note: I have left Mike Rutty's notes, which I slightly modified, as he submitted them to me, including his statements concerning the Committee's Charter and Recommendations and Actions of the Committee. I have also included my summary on these issues from notes that I took. Please review both to be sure that we have captured all of the discussions. Dave Thomas, Chair]

1994 National Vegetation Management Steering Committee

June 15, 16, 1994

Tempe, Arizona

Attendees:

Garth Baxter R-4 FPM (retired), Ogden, UT
Bob Campbell Canadian Forest Service, Sault Ste. Marie, Ontario, Canada
Doug Parker R-3, Albuquerque, NM
George Ice NCASI (Corvallis, OR.)
Charlie McMahon ... SO, Auburn, AL
Mike Rutty Stanislaus NF, Sonora, CA
Dave Thomas WO, FPM
Ed Holstein R-10, Anchorage, AK
Paul Mistretta R-8, Atlanta, GA
Frank Burch WO, TM
Alison Corey R-3, FPM, Ogden, UT

The following are notes I captured:

Goals to achieve prior to end of day on Thursday.

1. Review committee scope.
2. Set meeting objectives
3. Review regional events, issues etc., as brought forward by the committee members.
4. Review potential for change of scope: include integrated vegetation management?
5. Discuss lack of National Leadership, consider ways to stimulate support by the WO.
6. FPM looking for ways to generate funds for demonstration projects.
7. Increase participation by WO in risk communication.
8. Propose to the WO ways to assist field in use of herbicides (i.e. policy and procedures).
9. Vegetation Management and Ecosystem Management. Committee to generate a mandate of involvement in ecosystem management.
10. Seek regional consistency in ecosystem management.
11. Indicate committee opinions on technology transfer.
12. Forest Health - State and Private Forestry is staff group for this. Need to enhance that role.
13. Discuss Strategic Plan for Pesticide-Use Management and Coordination.
14. Discuss the use of and nonuse of herbicides.

C. Proposed Revised Committee Charter and Purpose

Committee Title: National Steering Committee for Managing Vegetation within Forest and Range Ecosystems

Committee Purpose The purpose of this committee is to provide recommendations and scope: on an annual basis to the USDA Forest Service, Forest Pest Management, Timber Management, Range Management, Ecosystems Management, Forest Management Research, Wildlife and Fisheries, and Watershed staffs that support the safe, effective, economical and environmentally sound use of herbicides within the context of integrated pest management within Ecosystem Management of the anticipated future direction and research needs of forest vegetation management.

The scope of this committee shall include herbicide-use management as it relates to environmental impact and documentation, herbicide environmental fate, risk assessment, data gaps, herbicide application technology, information technology, research needs, and information and technology transfer.

D. Committee Member Reports on Current Vegetation Management Activities

Charlie McMahon, SO

(A copy of "The Role of Low Impact Herbicide's in Ecosystem Management" by McMahon, Miller, and Thomas is included in the Appendix.)

Paul Mistretta, Region 8 -

Region 8 has a continuous herbicide program, but use has dropped from 150,000 acres to 71,000 acres in the last few years. Most uses are site preparation and plantation release.

There is a lawsuit pending on the Ouachita, NF to suspend all use of herbicides regardless of NEPA.

Courts have found two documents (a Forest Plan and an herbicide EIS) to be acceptable. They are now under appeal.

There is a movement to not pursue herbicide use on the part of Forests and Districts.

The Region has pesticide applicator certification program which certifies CORs, prescribers and users.

Due to funding cutbacks the Region was forced to withdraw from Auburn University COOP for herbicides this year. The Region is looking for ways to get back in. One potential solution is to have the Washington Office join.

Timber harvests are going from clearcuts to single tree/group cuttings.

Herbicide applications are selective, with almost none being broadcast treatments.

Region has put together a Spanish safety manual for herbicide applications which is almost complete.

There is no current contract with Labatt-Anderson for risk assessments. Risk assessments are needed for R-8 aquatic applications.

(Region 8's report is in the Appendix).

Baxter/Misretta Conversation

Government (Forest Service) has maximized risk when doing risk assessments (yielding overly conservative assessments (i.e., Dermal intake rates (ones not known) are being estimated at 10%, and seems too high. An English paper on triclopyr showed 1.6%. U.S. has ignored and used 10%.

FSH 1909 needs revision to reflect reality of herbicide use (i.e. restriction of aerial application requiring an EIS; campgrounds use categorical exclusions.

Research activity: If research is done at a research facility, a categorical exclusion can be used. If the same project is done for field research, and is done on a National Forest where the responsible official is the District Ranger or Forest Supervisor, an EA is required.

Current plan is to reformat research study plans to meet NEPA.

Ed Holstein-Region 10

Competing vegetation in Alaska is mostly a problem in SE Alaska where white spruce and coastal spruces come together. Bark beetles are a problem in the same area.

Interior stands are not regenerating following beetle attack or timber harvest. Grasses are the biggest problem.

Some individuals in R-10 do not wish to use herbicides.

Native Corporations are working with Mike Newton on vegetation management techniques for site prep. They are also doing environmental fate studies.

Ed sees the potential for an increase in herbicide use especially by Native Corporations in Alaska. They are limited by the size of available land base in Alaska.

Doug Parker-Region 3

The R-3 pinyon/juniper type is in unsatisfactory condition. They have experienced soil loss and understory vegetation losses. (Over the western U.S. including all small tree/shrub lands there may be 50 million acres). R-3 pinyon/juniper type there is a 3 million acre need on Forest Service lands alone. There is that much more on State and private lands. Fire has not proved to be very useful as a treatment since there is little or no ground cover to carry a flame. Mechanical methods are considered environmentally unacceptable. A willingness to do must be generated at the ground level. Herbicides will need to be used for an effective program. There are ongoing experiments with application of picloram and tebuthuron on the bole of pinyon or juniper trees. From there it is carried to the root systems by rains. Trials to date have all been on private lands. Currently there are efforts ongoing to transfer the technology and trials to USFS lands. Benefits are seen as being wildlife, soils, and hydrology. There is some NEPA work being done on proposed projects.

(Region 3's report is in the Appendix).

Garth Baxter, Region 4

Garth (retired) is working on a volunteer basis on the committee as a range representative.

Ed Monnig also asked Garth to comment on Region 1 activities, however he didn't receive Ed's input [Editor's note: I received Ed's input and have included Region 1's report in the Appendix].

Region 1 treats about 15,000 acres per year with noxious weeds, range improvements, rights-of-way, and timber management being the benefiting function (in that order of use).

The Region has 500,000 acres of sagebrush needing management. Fire is not a practical tool in these situations. If there is more than 10 to 14% ground cover in big sagebrush you lose species diversity. Rabbitbrush is a control problem. Herbicides are not effective enough. At about 12% cover of sagebrush, rabbitbrush is held in check. These are Garth's personal observations. {But, note the precision, he's probably pretty much right on {MJR}}. Garth is looking at the potential of thinning sagebrush to achieve diversity and still keep rabbitbrush in check. University studies show that with increased plant diversity, fauna (small animals) diversity also increases. One treatment (thinning) with tebuthuron maintains sagebrush density for 10 +/- years.

Full kill of sagebrush yields rabbitbrush. Livestock exclosures (dating as far back as fifty years) shows that grazing hasn't caused loss of other species or gain in sagebrush stocking as previously thought.

Fishlake NF has 150,000 acres in a wildlife/range conflict test management area. They are looking at using herbicides to get top kill using 2,4-D in aspen to stimulate sprouting for wildlife use. Also looking at thinning sagebrush. Aerial applications being used.

Garth feels that District Rangers or Forest Supervisors should be able to approve herbicide use (for noxious weeds) in wilderness. Would ease timeliness of projects and respects expertise of ground personnel. Any change of policy would need to be coordinated with the recreation staff in the Washington Office. [Editor's note: This policy change has been coordinated with Recreation in the Washington Office and the appropriate manual direction is not being changed. The primary reason is due to the complexity of the wilderness legislation, and the current national policy on what activities are acceptable within wilderness areas].

Bob Campbell - Canadian Forest Service, Sault Ste. Marie, Ontario, Canada

(See Appendix for Bob's Full Report)

Frank Burch-TM, Washington Office

Frank is the new WO overseer of the Forest Service tree nurseries, as well as reforestation and timber stand improvement.

Reforestation needs are nationally declining since start of the decade. The budget mirrors that decline.

TSI needs have been increasing ever since the 1980's. Insufficient National budget. Release is the biggest need followed by thinning. There are some needs in pruning and fertilization.

Consolidation of budgets (i.e. TSI, Tree Improvement, etc) will cause increased competition for dollars. Some functions will not receive funding.

Undocumented Workers

Undocumented workers working on reforestation and TSI projects became an issue early last fall after a news reporter asked about the Forest Service employing illegal aliens on labor intensive contracts. The reporter had presented proof of the use of undocumented workers. Assistant Secretary Lyons installed a policy to require WO review/approval of all labor intensive projects prior to award. He also required that all avenues of investigation of contractors be made prior to the contract packages going to the WO. This involved the Department of Labor and the Small Business Administration. This added approximately 60-days to the procurement of labor intensive contracts. A database was generated to identify contractors with whom Department of Labor and/or Forest Service had previous problems. Many programs were impacted but in the long run most projects were resolved acceptably. We expect to have to live with this for at least the next 2-years.

Even after all the effort that went into this, the Border Patrol still picked up 130 illegals in Utah, on a government project, with counterfeit green cards.

Mike Rutty, Stanislaus NF, Region 5 - see Mike's notes in the Appendix

George Ice, NCASI, Corvallis, Oregon

George has been involved in water monitoring of applications of herbicides, fungicides, and insecticides. On 7 sites none had exceeded EPA standards except on one Christmas tree Farm. The State (Washington) concluded that the labels were violated on all applications since some material was detected even though well under the EPA standards. (See Appendix)

Region 5 - See John Fiske's comments in Appendix

Dave Thomas, FPM, WO

There is a role for Forest Pest Management in National Forest vegetation management programs. Dave Thomas has been reassigned to the Washington Office vegetation management position.

Larry Elworth is a political appointee as a Special Assistant for Pesticide Policy to Assistant Secretary Lyons. The Washington Office has established a good working relationship with Larry.

Proposed USDA strategy on Integrated Pest Management: The new USDA IPM strategy should not have a negative impact on the Forest Service. The goal of a bill brought forward by the current Administration, which prompted the new USDA strategy, is 75% of all agricultural lands be utilize integrated pest management by the year 2000. The Forest Service has had an Integrated Pest Management policy since 1979 when President Carter issued an Executive Order.

There is a long term strategy to change the National Pesticide Use Report to include more information than just the number of acres and pounds of active ingredient. There will be changes in the 1994 report.

The WO (and the committee) is concerned about the lack of line officer support of pesticide use and are going to take action.

EPA worker protection standards. There will be a lot of exemptions for forestry applications. Changes are currently being coordinated by the WO with EPA.

Endangered Species Act enforcement and pesticide labeling, we will continue with consultations. The Forest Service and Bureau of Land Management have met to coordinate with the US Fish and Wildlife Service.

The National Vegetation Management Steering Committee membership is being expanded to try to include representatives from all potential players (i.e. Watershed, Fire, Range, etc.). The goal for the committee is to continue, but to revise the charter of the committee to be more meaningful.

Joan Comanor is the new Deputy Chief for State and Private Forestry. She has stated her support for the pesticide program of the Forest Service, and has stated that we have to work harder to resolve the image that pesticides currently have.

There are five positions in FPM in the Washington Office Pesticide-Use, Management and Coordination group. Three positions are currently vacant. Current plan is to try an attempt to fill 2 of those positions soon.

There are nine FPM steering committees. Dave will provide our group with a list of the committees and what their focus is.

II. RECOMMENDATIONS AND ACTIONS - Priorities for Committee

A. Committee Actions:

1. A list of recommendations for committee action was generated.
2. Refocus of the scope of the committee- broadened to include IPM.
3. Restate the committee's purpose.
4. Discussion of funding sources for trials and tech transfer.
5. Broadening of membership base.

Ecosystems Management (i.e. Gene Lassard)
Watershed and Air

Dave needs to touch with Val Chambers of the Public Affairs Staff concerning a recent issue that surfaced concerning the Federal Advisory Committee Act (FACA) relating to outside agency advisors on the committee. [Editors note: I have included detailed information on FACA in the appendix. FPM is determining the best approach to use for adhering to FACA. FPM will request an opinion from OGC through the Deputy Chief, State and Private Forestry.

Brief discussion on continued existence of the National Vegetation Management Steering Committee. Gist of it was continue so long as we're being effective, and assigned tasks have due dates.

B. Recommendations/Actions - High, Medium, and Low Priorities

High Priority Action Items

1. Clarify FACA regulations - Dave Thomas within 2-weeks.
2. Committee Charter - done. Dave to coordinate with the WO and clarify the charter. We should review annually and make sure we're on track.
3. National Policy - Reaffirm National Policy and support for use of pesticides in Ecosystem Management. Risk communication needs to be done first. Reissue FSM 2150 and FSH 2109.14 with a cover letter from the Chief. Dave considering contracting for a program to present to line officers supporting pesticide use and risk communication. Murrill Nisbet Associates might be a suitable such contractor.

4. A white paper on the "Role of Herbicides in Ecosystem Management" issued by the WO was suggested. The WO has already indicated a need for and agreed to do. Dave Thomas and Frank Burch have agreed to collaborate on this. Dave has an outline started already. There were suggestions to present at the next National Silvicultural Workshop (New Mexico) and in California at the Forest Vegetation Management Conference.

5. Risk communication. Dave/committee see as best being:

- a. A presentation to the leadership forum for WO and Regional Forester's
- b. Contract formal presentations to Forest Supervisors and District Rangers on the use of pesticides and risk communication.
- c. All resource levels need to hear this message.

6. Forest Pest Management role is not currently perceived as a problem. Dave to reevaluate FSH 2109.14 and FSM 2150 concerning the wilderness approval authority.

7. Technology Development Program. Dave has notes and is to restate the statement.

8. Bob Campbell is the subcommittee herbicide monitoring database.

9. International Partnerships ongoing.

Medium Priority Action Items

1. Herbicide application training, doing, and the Strategic Planning Plan calls for evaluations.

2. NAPIAP. The completed studies need to be distributed.

3. Long term monitoring. Should be moved to the research need list.

Low Priority Action Items

1. National Forest Service versus Private use of herbicides-merged into a high priority item.

2. Ecological risk assessment. This has White House interest.

3. A strategic plan for the committee. We probably need to do it, but some other items need to occur first. (i.e. committee purpose statement, "Role of Herbicides in Ecosystem Management" etc., risk communication strategy.)

C. Proposed Committee Representation:

USDA Forest Service

Research

Forest Environmental Research

Forest Management Research

National Forest Systems

Timber Management

Range Management

Fisheries and Wildlife

Watershed and Air Management

Ecosystem Management

State and Private Forestry

Forest Pest Management

Timber Industry

Utility Company

State Forester

Forestry Canada

National Council of the Paper Industry for Air and Stream Improvement
(NCASI)

Potential Funding Sources:

National Agricultural Pesticide Impact Assessment Program funds (NAPIAP)
Technology Development funds (FPM)
Forest Service Research funds
Program Area funding (i.e. specific staff funding)
Cooperative Studies
Administrative Studies

D. Committee Member Reports (enclosed in Appendix A).

E. Federal Advisory Committee Act (enclosed in Appendix B).

F. RECOMMENDATIONS/ACTIONS

High Priority

1. Determine if the Steering Committee is in violation of the Federal Advisory Committee Act of 1977 (FACA). **High Priority.** Responsible person: Dave Thomas, FPM, WO [See Appendix B]

2. Write briefing paper on "The Role of Herbicides in Ecosystem Management": FPM and TM will take the lead. Responsible persons: Frank Burch, TM, WO, and Dave Thomas, FPM, WO **Very High Priority**.
3. Discuss and make recommendations to the Director of Forest Pest Management the role of the National Vegetation Management Steering Committee. **Very High Priority** Responsible person: Dave Thomas, FPM, WO
4. Redefine committee purpose and charter. **High Priority**. Accomplished
5. Review Forest Pest Management's authority's outlined in the Cooperative Forestry Assistance Act, as amended. Determine if vegetation management can be considered for Technology Development funding. **Very High Priority**. Responsible person: Dave Thomas, FPM, WO; entire steering committee. Action needed: Coordinate with Director, Forest Pest Management and Budget Analyst, FPM, WO; Responsible person: Dave Thomas, FPM, WO
6. Risk Communication: A critical item identified unanimously by the steering committee was the need for a National effort for better risk communication, both internally and externally! Throughout the Forest Service, there appears to be a lack of consensus supporting the use of herbicides in managing unwanted vegetation. Many line officers support their use, but many do not, primarily due to the extreme adverse reaction anticipated from the public and the threat of appeals and litigation. There is also a consensus that there is a lack of public understanding of the risks and benefits associated with the use of herbicides. The role of herbicides in the context of Ecosystem Management needs to be clearly identified, for internal and external use. Additionally, risk communication needs to be identified as a critical need Nationally, and an appropriate action plan be developed and accomplished in a relatively short time frame. The use of outside organizations (i.e. contractors) specializing in risk communication is highly recommended. The need for a clear statement of National direction on the use of herbicides in the context of Ecosystem Management reiterated by the Chief of the Forest Service. **Very High Priority**. Responsible person: Dave Thomas, FPM, WO, with coordination Nationally with Forest Pest Management and Regional Foresters and Station Directors.
7. Review current list of existing registration and reregistration data gaps, and develop National priorities for filling the data gaps with NAPIAP grant funding. **Very High Priority**. Responsible staff: Forest Pest Management, Washington Office.
8. Due to lack of funding, Region 8 has dropped out of the Auburn Vegetation Management Cooperative. It was suggested that this is an important cooperative with much good vegetation management research being accomplished. It was suggested that the Washington Office rejoin this cooperative, and coordinate Nationally the needs in vegetation management research. **High Priority**. Responsible person: Dave Thomas, FPM, WO.

9. Establish partnerships in vegetation management with Canada, State Foresters and private industry to share information on vegetation management research needs, new information or research in vegetation management, herbicide efficacy, application technology and herbicide safety issues. **High Priority.** Responsibility: Continuing and ongoing effort.

10. The National Vegetation Management Steering Committee needs to develop and produce a strategic plan as to the future of the committee. **High Priority.** Responsibility: National Vegetation Management Steering Committee. Timeframe: Accomplish during next annual meeting.

Medium Priority

1. Determine the need for and provide national level herbicide-use training. Responsibility: Forest Pest Management, Washington Office

2. Distribute the previous results NAPIAP studies pertinent to the field in the areas of herbicide fate, efficacy and toxicology. Responsibility: Forest Pest Management, Washington Office.

3. Develop mechanisms for information exchange among Regions, Stations, Northeastern Area and the Washington Office. Examples would include NAPIAP summaries, Pesticide Advisory Memorandums, Pesticide Timely Tips and the Annual Pesticide Coordinator meeting. Responsibility: Forest Pest Management, Washington Office.

Low Priority

No items were considered low priority.

Sub-committees

Previously, two sub-committees were appointed as part of the National Vegetation Management Steering Committee.

1. Vegetation Management Monitoring Database Sub-Committee

Bob Cambell, Canadian Forest Service, Chair

"The sub-committee will address the need for a database of environmental and efficacy data generated by herbicide projects. Operational and other projects provide opportunities to capture and archive data that are useful for a number of purposes including environmental documentation and technology development. For data to be meaningful, its generation, collection and storage needs a protocol and consistency. The initial charge of the sub-committee is to outline and approach to establishing a database that includes criterion to be followed and to be reported by project people who are willing to participate. (Source: 1992 Steering Committee Notes)

2. Worker Exposure Sub-Committee

Ed Monnig, Region 1, Chair

"The sub-committee will review the literature and produce an annotated bibliography, identify worker exposure data gaps, and draft recommendations for committee review. This assignment should be completed by December, [1994]. The date previously stated December, 1993, so I changed it to 1994. (Source: 1992 Steering Committee Notes)

RESEARCH NEEDS IN VEGETATION MANAGEMENT

1. Post herbicide treatment residue studies in vegetation.
2. Risk communication - how can we best reach our public, both internally and externally.
3. Effects of competing vegetation within other resource areas - the effect on biodiversity,
4. Develop an effective vegetation management data base.
5. Worker exposure studies associated with herbicide application - data gaps exists.
6. Development and evaluation of inexpensive technology for monitoring pesticide residues.
7. The incorporation of global positioning systems (GPS) in aerial herbicide applications.
8. Risk assessment for non-chemical vegetation management (i.e. fire, manual cutting, mechanical removal, etc.).
9. The need to identify successful vegetation management programs and projects, including outside agencies, such as the Nature Conservancy.
10. Improve decision support systems (i.e. expert system). [Editors note: I was sure exactly what was meant by this statement]
11. Development of "weed guides" (i.e. "Weeds of the West").
12. Research results versus NEPA requirements - are there barriers and conflicts with policy?
13. Develop a computer based system that will assist in evaluating site specific pesticide treatment risk assessments.
14. Identify long term economic benefits of herbicide applications.
15. Data gaps exists in dermal penetration studies.

16. Development of national protocols for sampling pesticide residues.
17. Data needs in non-target impacts associated with pesticide-use.
18. Evaluation of inexpensive water quality monitoring (i.e. bioassay kits).

ADDRESSES OF COMMITTEE MEMBERS

David F. Thomas, Chair
 USDA, Forest Service
 FPM, AB-2S
 P.O. Box 96090
 Washington D.C. 20090-6090

Frank Burch
 USDA, Forest Service
 TM, AB-3SW
 P.O. Box 96090
 Washington D.C. 20090-6090

Dr. Robert Cambell
 Forest Pest Management Institute
 Box 490
 Sault Ste. Marie, Ontario
 Canada, P6A 5M7

Mike Ruttty
 Stanislaus National Forest
 19777 Greenlet Road
 Sonora, California 95370

Dr. Charlie McMahon
 G. W. Andrews Forestry Science Laboratory
 Devall Street
 Auburn University, Alabama 36849

Phil Aune
 Silviculture Laboratory
 2400 Washington Avenue
 Redding, California 96001

Paul Mistretta
 Southern Region
 1720 Peachtree Road, N.W.
 Atlanta, GA 30367

Ed Monnig
 Northern Region
 P.O. Box 7669
 Missoula, MT 59807

Jim Olivarez
 Northern Region
 P.O. Box 7669
 Missoula, MT 59807

Dr. George Ice
 Research Forest Hydrologist
 National Council of the Paper
 Industry for Air and Stream
 Improvement
 P.O. Box 458
 Corvallis, OR 97339

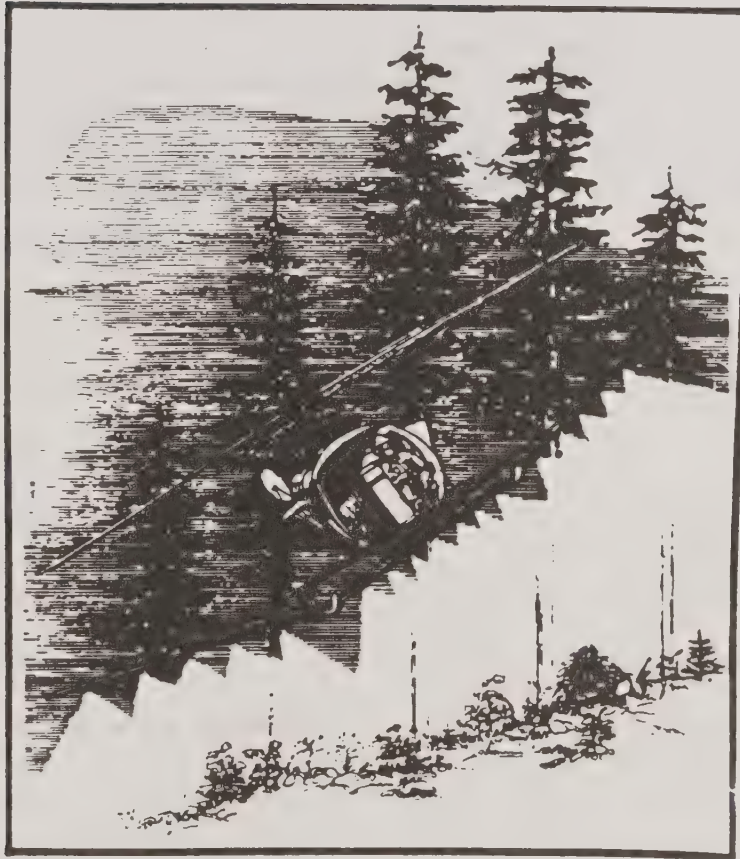
Ed Holsten
 Alaska Region
 3301 "C" Street
 P.O. Box 21
 Anchorage, AK 99503-3356

Doug Stone
 Forestry Sciences Laboratory
 1831 Highway 169 E.
 Grand Rapids, MN 55744

Garth Baxter, Region 4 (Retired)
 1130 East 1674
 North Ogden, UT 84414

IV. AGENDA

1994 National Vegetation Management Steering Committee
June 15 - 16, 1994



Radisson Hotel
Tempe, Arizona

(602) 894-1400
(602) 894-8628 (FAX)

Agenda
 National Vegetation Mangement Steering Committee
 June 15-16, 1994
 Radisson Hotel, Tempe, Arizona

Wednesday, June 15, 1994

0800 - 0815 Welcome and Introductions Dave Thomas, Chairperson
 0815 - 0900 Meeting Objectives: Committee to Define All

Proposed Meeting Objective: Review previous role of the National Vegetation Management Steering Committee; review minutes from previous meetings; review Forest Pest Managements authority's in the Cooperative Forestry Assistance Act fo 1978, as amended by the 1990 Farm Bill; Regional Reports - What are the Regions, Research Stations and NE Area, Canada doing in Vegetation Management?; Define the role and future of the National Vegetation Management Steering Committee; Develop a new charter for the committee; Set meeting dates for 1995.

0900 - 0915 Develop Final Agenda All
 1000 - 1030 Break
 1030 - 1200 Continue With Agenda All
 1200 - 1300 Lunch (On your own)
 1300 - 1700 Continue With Agenda All
 1700 Break for the day

Thursday, June 16, 1994

0800 - 1000 Continue with agenda All
 1000 - 1030 Break
 1030 - 1200 Continue with agenda All
 1200 - 1300 Lunch
 1300 - 1630 Continue with agenda All
 1630 - 1700 Summarize meeting/Critique All

Friday, June 17, 1994

Travel Home - Have a safe trip!

MESSAGE DISPLAY FOR DAVE THOMAS

Vegetation Mgmt.

From: Dave Thomas Host: W01C
Postmark: May 25,94 8:29 AM Delivered: May 25,94 8:29 AM
Status: Previously read
Subject: Steering Committee

Message:

We have received confirmation for our planned Vegetation Management Steering Committee meeting scheduled for June 15 and 16 at the Madison Hotel in Tempe, Arizona (i.e. Phoenix). Their phone number is (800) 547-8705 or (602) 894-1400. A block of rooms has been reserved and the government rate is \$55.83 plus tax for a total of \$61.00. I plan to start at 0800 on the June 15 and end at 1700 on June 16. I have a meeting at the Deputy Secretary's office in a few minutes, but will put together an agenda, meeting objectives, expectations, etc. tomorrow. I look forward to meeting with you to focus on vegetation management issues that we are dealing with now and in the future.

-----X-----

MESSAGE DISPLAY FOR DAVE THOMAS

o Vegetation Mgmt.

From: Dave Thomas Host: W01C
Postmark: May 19,94 3:54 PM Delivered: May 19,94 3:54 PM
Status: Previously read
Subject: Meeting

Message:

I've heard back from most everyone and have decided to go ahead and get the committee together as I proposed on June 15 and 16 in Phoenix, Arizona. I will put everything together concerning details and will try to talk to each of you before we meet. I'm aware that a few won't be able to make it, but such would be the case on any other date. Details will follow early next week when the hotel confirms our meeting room.

Dave Thomas, Chairperson

-----X-----

United States
Department of
Agriculture

Forest
Service

Washington
Office

14th & Independence SW
P.O. Box 96090
Washington, DC 20090-6090

Reply to: 2150

Date:

Subject: National Vegetation Management Steering Committee

To: Regional Foresters, Station Directors

In 1988, the Chief established the National Vegetation Management Steering Committee. The purpose of this committee is to provide recommendations on an annual basis to the Washington Office that support safe, effective, economical, and environmentally sound use of pesticides in managing vegetation. The scope of this committee includes herbicide-use management as it relates to environmental impact, herbicide environmental fate, risk assessments, herbicide application technology, training, information databases, and information and technology transfer.

The current composition of the committee is as follows:

Phil Aune	USFS/PSW (Redding, CA)
Jack Barry	WO/FPM (Davis, CA)
Garth Baxter	R-4/FPM (Ogden, UT)
Jim Brown	R-8/FPM (Atlanta, GA)
Bob Cambell	Forestry Canada (Sault Ste. Marie, Ontario, Canada)
George Ice	NCASI (Corvallis, OR)
Charlie McMahon	SO (Auburn, AL)
Ed Monnig	R-1/FPM Missoula, MT)
Mike Rutty	R-5, Stanislaus NF (Sonora, CA)
Dave Thomas	WO/FPM (Washington, DC) (Formerly R-5, Eldorado NF)
Ed Holstein	R-10, Anchorage, Al
Paul Mistretta	R-8, Atlanta, GA
Jim Olivarez	R-1, RGE, Missoula, MT
Frank Burch	WO, TM, Washington, DC
Doug Stone	North Central Station, Mn

Due to recent changes in personnel and work assignments, I am assigning Dave Thomas, WO/FPM, as the Chairperson for this important committee. In addition, there is an additional need to expand the membership slightly to include field personnel who are actively working in vegetation management. We would like one individual from the field of Range Management and one individual from Timber Management. Also, we would like to invite participation from Range Management, Timber Management, Watershed and Air Management and Wildlife and Fisheries from the Washington Office.

Please submit the names, address (including "DG" address) and a brief background of individuals who would be interested in serving on this committee

to Dave Thomas, Forest Pest Management Staff by June 8, 1993. Dave can be reached at (202) 205-1600 or D.Thomas:W01C.

The next meeting of the steering committee is planned for December, 1993. The specific meeting details and agenda will be sent to the committee members in November, 1993.

JAMES L. SPACE
Director of Forest
Pest Management

cc:
Director, Range Management, WO
Director, Timber Management, WO
Director, Wildlife and Fisheries, WO
Director, Watershed and Air Management, WO
Committee Members

Cooperative Forestry Assistance Act of 1978

- Act of July 1, 1978 (P.L. 95-313, 92 Stat. 365 as amended; 16 U.S.C. 2101(note), 2101-2103, 2103a, 2103b, 2104-2105)

Note—This Act was amended by P.L. 100-418 to add Section 15 (redesignated as Section 18 by P.L. 100-418); amended by P.L. 101-624, Title XII, to add new sections and change some existing sections, by P.L. 101-513 to conform with international provisions of the International Forestry Cooperation Act of 1990, and by P.L. 102-237 to make some technical amendments.

Short Title

Sec. 1. This Act may be cited as the "Cooperative Forestry Assistance Act of 1978." (16 U.S.C. 2101(note))

Findings, Purpose, and Policy

Sec. 2. (a) Findings.—Congress finds that—

(1) most of the productive forest land of the United States is in private, State, and local governmental ownership, and the capacity of the United States to produce renewable forest resources is significantly dependent on such non-Federal forest lands;

(2) adequate supplies of timber and other forest resources are essential to the United States, and adequate supplies are dependent on efficient methods for establishing, managing, and harvesting trees and processing, marketing, and using wood and wood products;

(3) nearly one-half of the wood supply of the United States comes from nonindustrial private timberlands and such percentage

could rise with expanded assistance programs;

(4) managed forest lands provide habitats for fish and wildlife, as well as aesthetics, outdoor recreation opportunities, and other forest resources;

(5) the soil, water, and air quality of the United States can be maintained and improved through good stewardship of privately held forest resources;

(6) insects and diseases affecting trees occur and sometimes create emergency conditions on all land, whether Federal or non-Federal, and efforts to prevent and control such insects and diseases often require coordinated action by both Federal and non-Federal land managers;

(7) fires in rural areas threaten human lives, property, forests and other resources, and Federal-State cooperation in forest fire protection has proven effective and valuable;

(8) trees and forests are of great environmental and economic value to urban areas;

(9) managed forests contribute to improving the quality, quantity, and timing of water yields that are of broad benefit to society;

(10) over half the forest lands of the United States are in need of some type of conservation treatment;

(11) forest landowners are being faced with increased pressure to convert their forest land to development and other purposes;

(12) increased population pressures and user demands are being placed on private, as well as public, landholders to provide a

(3) Construction.—Notwithstanding any provision of State law, conservation easements shall be construed to effect the Federal purposes for which they were acquired and, in interpreting their terms, there shall be no presumption favoring the conservation easement holder or fee owner.

(d) Appropriation.—There are authorized to be appropriated such sums as may be necessary to carry out this section. (16 U.S.C. 2103c)

Forest Health Protection

Sec. 8. (a) In General.—The Secretary may protect trees and forests and wood products, stored wood, and wood in use directly on the National Forest System and, in cooperation with others, on other lands in the United States, from natural and man-made causes, to—

(1) enhance the growth and maintenance of trees and forests;

(2) promote the stability of forest-related industries and employment associated therewith through the protection of forest resources;

(3) aid in forest fire prevention and control;

(4) conserve forest cover on watersheds, shelterbelts, and windbreaks;

(5) protect outdoor recreation opportunities and other forest resources; and

(6) extend timber supplies by protecting wood products, stored wood, and wood in use.

(b) Activities.—Subject to subsections (c), (d), and (e) and to such other conditions the Secretary may prescribe, the Secretary may, directly on the National Forest System, in cooperation with other Federal departments on other Federal lands, and in cooperation with State foresters, or equivalent State officials, subdivisions of States, agencies, institutions, organizations, or individuals on non-Federal lands—

(1) conduct surveys to detect and appraise insect infestations and disease conditions and man-made stresses affecting trees and establish a monitoring system throughout the forests of the United States to determine detrimental changes or improvements that occur over time, and report annually concerning such surveys and monitoring;

(2) determine the biological, chemical, and mechanical measures necessary to prevent, retard, control, or suppress incipient, potential, threatening, or emergency insect infestations and disease conditions affecting trees;

(3) plan, organize, direct, and perform measures the Secretary determines necessary to prevent, retard, control, or suppress incipient, potential, threatening, or emergency insect infestations and disease epidemics affecting trees;

(4) provide technical information, advice, and related assistance on the various techniques available to maintain a healthy forest and in managing and coordinating the use of pesticides and other toxic substances applied to trees and other vegetation, and to wood products, stored wood, and wood in use;

(5) develop applied technology and conduct pilot tests of research results prior to the full-scale application of such technology in affected forests;

(6) promote the implementation of appropriate silvicultural or management techniques that may improve or protect the health of the forests of the United States; and

(7) take any other actions the Secretary determines necessary to accomplish the objectives and purposes of this section.

(c) Consent of Entity.—Operations under this section to prevent, retard, control, or suppress insects or diseases affecting forests and trees on land not controlled or administered by the Secretary shall not

be conducted without the consent, cooperation, and participation of the entity having ownership of or jurisdiction over the affected land.

(d) Contribution by Entity.—No money appropriated to implement this section shall be expended to prevent, retard, control, or suppress insects or diseases affecting trees on non-Federal land until the entity having ownership of or jurisdiction over the affected land contributes, or agrees to contribute, to the work to be done in the amount and in the manner determined appropriate by the Secretary.

(e) Allotments to Other Agencies.—The Secretary may, in the Secretary's discretion, and out of any money appropriated to implement this section, make allocations to Federal agencies having jurisdiction over lands held or owned by the United States in the amounts the Secretary determines necessary to prevent, retard, control, or suppress insect infestations and disease epidemics affecting trees on those lands.

(f) Limitation on Use of Appropriations.—

(1) Removing dead trees.—No amounts appropriated shall be used to—

(A) pay the cost of felling and removing dead or dying trees unless the Secretary determines that such actions are necessary to prevent the spread of a major insect infestation or disease epidemic severely affecting trees; or

(B) compensate for the value of any property injured, damaged, or destroyed by any cause.

(2) Insects and diseases affecting trees.—The Secretary may procure materials and equipment necessary to prevent, retard, control, or suppress insects and diseases affecting trees without regard to section 3709 of the Revised Statutes (41 U.S.C. 5), under whatever procedures the Secretary may prescribe, if

the Secretary determines that such action is necessary and in the public interest.

(g) Partnerships.—The Secretary, by contract or cooperative agreement, may provide financial assistance through the Forest Service to State foresters or equivalent State officials, and private forestry and other organizations, to monitor forest health and protect the forest lands of the United States. The Secretary shall require contribution by the non-Federal entity in the amount and in the manner determined appropriate. Such non-Federal share may be in the form of cash, services, or equipment, as determined appropriate by the Secretary.

(h) Authorization of Appropriations.—There are authorized to be appropriated annually such sums as may be necessary to carry out subsections (a) through (g).

(i) Integrated Pest Management.—

(1) In general.—Subject to the provisions of subsections (c) and (e), the Secretary shall, in cooperation with State foresters or equivalent State officials, subdivisions of States, or other entities on non-Federal lands (hereafter in this subsection referred to as the "cooperator")—

(A) provide cost-share assistance to such cooperators who have established an acceptable integrated pest management strategy, as determined by the Secretary, that will prevent, retard, control, or suppress gypsy moth, southern pine beetle, spruce budworm infestations, or other major insect infestations in an amount no less than 50 percent nor greater than 75 percent of the cost of implementing such strategy; and

(B) upon request, assist the cooperator in the development of such integrated pest management strategy.

(2) Authorization of appropriations.—There are hereby authorized to be appropriated annually \$10,000,000 to implement this subsection. (16 U.S.C. 2104)

Urban and Community Forestry Assistance

Sec. 9. (a) Findings.—The Congress finds that—

(1) the health of forests in urban areas and communities, including cities, their suburbs, and towns, in the United States is on the decline;

(2) forest lands, shade trees, and open spaces in urban areas and communities improve the quality of life for residents;

(3) forest lands and associated natural resources enhance the economic value of residential and commercial property in urban and community settings;

(4) urban trees are 15 times more effective than forest trees at reducing the buildup of carbon dioxide and aid in promoting energy conservation through mitigation of the heat island effect in urban areas;

(5) tree plantings and ground covers such as low growing dense perennial turfgrass sod in urban areas and communities can aid in reducing carbon dioxide emissions, mitigating the heat island effect, and reducing energy consumption, thus contributing to efforts to reduce global warming trends;

(6) efforts to encourage tree plantings and protect existing open spaces in urban areas and communities can contribute to the social well-being and promote a sense of community in these areas; and

(7) strengthened research, education, technical assistance, and public information and participation in tree planting and maintenance programs for trees and complementary ground covers for urban and community forests are needed to

provide for the protection and expansion of tree cover and open space in urban areas and communities.

(b) Purposes.—The purposes of this section are to—

(1) improve understanding of the benefits of preserving existing tree cover in urban areas and communities;

(2) encourage owners of private residences and commercial properties to maintain trees and expand forest cover on their properties;

(3) provide education programs and technical assistance to State and local organizations (including community associations and schools) in maintaining forested lands and individual trees in urban and community settings and identifying appropriate tree species and sites for expanding forest cover;

(4) provide assistance through competitive matching grants awarded to local units of government, approved organizations that meet the requirements of section 501(c)(3) of the Internal Revenue Code of 1986, or other local community tree volunteer groups, for urban and community forestry projects;

(5) implement a tree planting program to complement urban and community tree maintenance and open space programs and to reduce carbon dioxide emissions, conserve energy, and improve air quality in addition to providing other environmental benefits;

(6) promote the establishment of demonstration projects in selected urban and community settings to illustrate the benefits of maintaining and creating forest cover and trees;

(7) enhance the technical skills and understanding of sound tree maintenance and arboricultural practices including practices involving the cultivation of trees, shrubs and complementary ground covers, of individuals involved in the plan-



United States
Department of
Agriculture



Forest Service

Forest Pest
Management

Davis, CA

THIRD REPORT

National Steering Committee for Management of Vegetation on Forest and Range Lands

FPM 93-6
January 1993

THIRD REPORT

National Steering Committee for
Management of Vegetation on
Forest and Range Lands

Compiled by:

John W. Barry
Douglas L. Parker

USDA Forest Service
Forest Pest Management
2121 C Second Street
Davis, CA 95616
(916)551-1715

CONTENTS

I.	INTRODUCTION	
	A. Committee Members Attending	1
	B. Proposal of a Committee Charter	2
	C. Committee Member Reports	2
II.	RECOMMENDATIONS / ACTIONS	
	A. Recommendations	3
	B. Actions	5
III.	SUMMARY	5
	APPENDIX	
	A. Committee Member Reports	
	B. Letter - Worker Exposure Sub-Committee	
	C. Letter - Vegetation Management Monitoring Database Sub-Committee	
	D. Committee Member Addresses	

I. INTRODUCTION

The third meeting of the National Steering Committee for Management of Vegetation on Forest and Range Lands met at Davis, CA, December 1-2, 1992.

A. Committee Members Attending

Phil Aune	USFS/PSW (Redding, CA)
Jack Barry	WO/FPM (Davis, CA)
Garth Baxter	R-4/FPM (Ogden, UT)
Jim Brown	R-8/FPM (Atlanta, GA)
Bob Campbell	Forestry Canada (Sault Ste. Marie, ON)
Jesus A. Cota	WO/FPM (Washington, DC)
George Ice	NCASI (Corvallis, OR)
Charlie McMahon	SO (Auburn, AL)
Ed Monnig	R-1/FPM (Missoula, MT)
Doug Parker	WO/FPM (Washington, DC)
Mike Rutty	Stanislaus NF (Sonora, CA)
Dave Thomas	Eldorado NF (Placerville, CA)

Complete addresses are provided in Appendix D.

B. Proposal of a Committee Charter

Committee Title: National Steering Committee for Managing Vegetation on Forest and Range Lands

Committee Purpose: The purpose of this committee is to provide recommendations on an annual basis to the USDA Forest Service, Washington Office staffs that support safe, effective, economical, and environmentally sound use of pesticides.

Committee Scope: The scope of this committee shall include herbicide-use management as it relates to environmental impact and documentation, herbicide environmental fate, risk assessment, herbicide application technology, training, information databases, and information and technology transfer.

Proposed Committee Representation:

. USDA Forest Service

Forest Environmental Research Staff

Forest Management Research

National Forest System - Timber Management, Range Management, Watershed and Air Management, Wildlife & Fisheries

Forest Pest Management

. Forest Industry

. State Forestry

. Utility Industry

Funding Sources: Projects, studies, and tests recommended by this committee and approved by Washington Office should be funded by the Staff or/and manager receiving direct benefits.

C. Committee Member Reports

Committee member reports are enclosed in (Appendix A).

II. RECOMMENDATIONS/ACTIONS

A. Recommendations

Recommendations are categorized by high, medium and low priority.

High Priority

1. Committee Charter

Approve committee charter as outlined in Paragraph I.B.

2. National Policy

Reaffirm National Forest Service policy and support of herbicides as a tool in ecosystem management.

3. FPM's Herbicide Role

Clarify WO/FPM's role in herbicide-use management. Although this is addressed in FSH 2109.14 there appears to be confusion on this point.

4. Ecosystem Management

Evaluate role of herbicides in ecosystem management.

5. Risk Communications

Develop a nationally coordinated effort on how to communicate risk to the public and employees.

6. Technology Development Program

Include herbicide application technology in the WO/FPM technology development program with funding contributions from benefiting staffs e.g. Range, Timber, Wildlife, and Recreation.

7. Herbicide Monitoring Data Base

Develop a database to monitor efficacy and environmental impact of herbicides. Initial step will be to identify existing efforts and to develop criteria for the database.

8. Human Exposure Studies

Review and document the literature on human exposure data to identify data gaps and prepare bibliography and recommendations to address data gaps.

9. Partnerships with Canada

Establish one-on-one Canada/USA partnerships to work on herbicide application, efficacy, and safety issues.

Medium Priority

1. Herbicide-Use Training

Determine and provide national level herbicide-use training.

2. NAPIAP

Distribute results of NAPIAP studies on herbicides fate and toxicology. Encourage peer review publications.

3. Networking

Develop mechanisms for information flow among Regions and Stations and among Regions and WO. Examples are NAPIAP summaries to Regions, develop and maintain target mailing lists and "Timely Tips".

4. International Role

Determine policy role of Forest Service in advising international partners in use of herbicides with consideration to science vs politics, environmental concerns, economics, reforestation, habitat restoration, etc.

5. Long-Term Monitoring

Establish long-term studies to monitor impact of herbicides on biodiversity and efficacy.

Low Priority

1. NFS vs Private Use of Herbicides

Prepare a white paper on land management objectives that reviews the likely reasons for conflict among adjoining landowners over use of herbicides.

2. Ecological Risk Assessment

Evaluate need to prepare ecological risk assessments in the future.

B. Actions

Two sub-committees were appointed to follow-up on issues discussed during the meeting.

1. Vegetation Management Monitoring Database Sub-Committee

The sub-committee will address the need for a database of environmental and efficacy data generated by herbicide projects. Operational and other projects provide opportunities to capture and archive data that are useful for a number of purposes including environmental documentation and technology development. For data to be meaningful, therefore, its generation, collection, and storage needs a protocol and consistency. The initial charge of the sub-committee is to outline an approach to establishing a database that includes criterion to be followed and to be reported by project people who are willing to participate.

2. Worker Exposure Sub-Committee

The sub-committee will review the literature and produce an annotated bibliography, identify worker exposure data gaps, and draft recommendations for committee review. This assignment should be completed by December 1993.

III. SUMMARY

The National Steering Committee for Managing Vegetation on Forest and Range Lands met at Davis, California on December 1-2, 1992. The committee developed several recommendations, and reviewed and discussed accomplishments related to but not necessarily a result of the committees 1989 and 1990 recommendations. The committee identified and prioritized several issues and have submitted recommendations to address these issues. Two sub-committees were established to follow-up on issues of human exposure to herbicides and to herbicide monitoring and efficacy databases. The committee recommends that its charter be revised to limiting the committee's activities to herbicide-use on forest and range lands. Currently the charter includes all methods of managing vegetation.

Library copy¹²



SECOND REPORT

National Steering Committee for
Application of Pesticides -
Vegetation Management

May 11, 1990

USDA Forest Service
Washington Office/Forest Pest Management
2121 C 2nd Street
Davis, CA 95616
(916)758-4600
FTS 460-1715

CONTENTS

I. INTRODUCTION

- A. Committee Members
- B. Committee Objective
- C. Operating Guidelines

II. RECOMMENDATIONS

- A. Administrative
- B. Training and Technology
- C. Cost Benefit Information and Discussion Support Systems
- D. Environmental and Safety Needs
- E. Biodiversity and Ecosystem Impact
- F. Application Technology and Equipment

III. PROGRESS

- A. Summary of Progress Related to Committee's 1988 Recommendations.
- B. Committee Member Reports

IV. DISCUSSIONS AND OTHER NEEDS

V. SUMMARY

APPENDIX

- A. Operating Guidelines For National Steering Committees
- B. Committee Member Reports
- C. Executive Summary - James H. Miller
Trip Report to People's Republic of China

I. INTRODUCTION

The second meeting of the National Steering Committee for Aerial Application of Pesticides - Vegetation Management met in West Sacramento, California, on March 7-8, 1990.

A. Committee Members

Phil Aune	PSW/TMR	(Redding, CA)
Garth Baxter	R-4/WO	(Ogden, UT)
Ken Bentson	PNW	(Portland, OR)
Robert Campbell*	FPMI	(Sault Ste. Marie, Ontario)
M. Boyd Edwards*	SE/TMR	(Dry Branch, GA)
Larry Gross	WO/FPM	(Washington, DC)
Ellis Huddleston	New Mexico	
	State University	(Las Cruces, NM)
Paul Mistretta	R-8/RO	(Atlanta, GA)
Ed Monnig*	R-1/FPM	(Missoula, MT)
Max Ollieu	WO/FPM	(Washington, DC)
Donald Perala	NC/TMR	(Grand Rapids, MI)
Michael Rutty	Stanislaus NF	(Sonora, CA)
Fay Shon	R-6/RO	(Portland, OR)
Larry Yarger*	NA/FPM	(Milwaukee, WI)
Jack Barry (Chair)	WO/FPM	(Davis, CA)

Members names followed by an asterisk were not in attendance. Robert Campbell, FPMI, was unable to attend due to foreign travel restrictions.

B. Committee Objectives

The objective of the USDA Forest Service (FS) National Steering Committee for Application of Pesticides - Vegetation Management is to review the needs and recommend pilot project and field testing of herbicides. The committee's charter was expanded in 1989 to include ground application.

C. Operating Guidelines

Operating guidelines, generic to the four FPM national steering committees, are enclosed in (Appendix A).

II. RECOMMENDATIONS

Recommendations for national attention are ranked by priority with one being the highest priority. The committee also recommends the staff and in some cases names a staff person to initiate the recommended action. The staff or person may choose to delegate the action to other organizational elements, staff persons, or to contractors.

A. Administration

1. Broaden charter of this committee to include all methods of vegetation management and review geographic representation on the committee in view of expanded charter; and change committee title to "National Steering Committee For Managing Vegetation on Forest and Range Lands".

Priority 1 - Chief

2. Involve R-3 as a partner with R-4 in developing a risk assessment for all herbicides registered for forest and range use.

Priority 1 - Chief

3. Lift the deferral on aerial application of herbicide.

Priority 1 - Chief

4. Identify Forest Health as a priority research program.

Priority 1 - Chief

5. Develop a program or initiative to inform the public on how the Forest Service manages national forest and range lands. The program would include vegetation management. The audience would include general public, to include students of all grades; state and private cooperators; and other Federal agencies.

Priority 2 - Chief

6. Clarify relationship of Forest Service and State pesticide certification program.

Priority 2 - WO/FPM

7. Evaluate opportunities to cooperate with New Mexico State University in spray technology, vegetation management, and biodiversity and ecosystem system impact research.

Priority 3 - WO/FPM

B. Training and Technology Transfer

1. Analyze national, regional, and area needs for herbicide-use training to include safety, material safety data sheets, State requirements, certification training, treatment prescriptions, and theory vs practice.

Priority 1 - WO/FPM & TM
Regions
NA

2. Encourage Forest Service support and participation of the Western Regional Coordinating Committee (WRCC-51) and Southern Regional Information Exchange Group on Pesticide Application Technology (SRIEG No. 29).

Priority 2 - WO/FPM

C. Cost Benefit Information and Decision Support Systems

1. Develop a decision support system for vegetation management prescriptions.

Priority 1 - WO/TM

2. Develop a national economic threshold model or model shell.

Priority 2 - WO/TM

3. Develop a national system to monitor vegetation management projects at the forest level, from planning, to treatment, to achievement of the desired result (e.g. tree crown closure).

R-6/FPM

D. Environmental and Safety Needs

1. Develop in cooperation with the Regions a computerized national risk assessment program.

Priority 1 - WO/FPM

2. Develop a national system to gather worker safety information for non-chemical methods of vegetation management.

Priority 1 - WO/FPM

3. Develop a system to collect, catalogue, and retrieve environmental fate data.

Priority 1 - WO/FPM

4. Support forestry worker exposure and safe work method studies, through NAPIAP, special project, and program funds.

Priority 1 - WO/FPM

E. Biodiversity and Ecosystem Impact

1. Develop a national policy on biodiversity, to include defining biodiversity, identifying WO staff responsibilities, and developing a national action plan.

Priority 1 - Chief

2. Support and initiate long-term studies (5-20 years) to monitor various vegetation management alternatives in the Lake States, Southwest, and Southeast.

Priority 1 - WO/FPM

3. Incorporate biodiversity in the PSW, R&D program and other applicable R&D programs.

Priority 1 - Research

4. Establish and maintain a bibliography and library of information (published papers, reports, "fugitive" literature, etc.) on vegetation management research and control projects.

Priority 1 - WO/FPM

F. Application Technology and Equipment

1. Evaluate use of the FSCBG and AGDISP aerial spray models for ground applications.

Priority 1 - WO/FPM

2. Review and update as appropriate the WO/Engineering (MTDC) publications: Catalogue Revegetation Equipment (Feb 1980) and Equipment For Reforestation and Timber Stand Improvement (Oct. 1980).

Priority 2 - WO/Engr.

III. PROGRESS

A. Summary of Progress Related to Committee's 1989 Recommendations.

1. Administrative

- a. Director, WO/FPM and Director, WO/Policy and Analyses are developing a staff paper on role of FPM in vegetation management.
- b. Director WO/FPM updated the Chief on national deferral of aerial application of herbicides.
- c. PSW has drafted a Memorandum of Understanding for vegetation management research cooperation with Canadian Forestry Service's Forest Pest Management Institute (FPMI).
- d. WO-FPM has drafted an MOU for pest management cooperation with FPMI.
- e. A committee membership was extended and accepted by FPMI.

- f. This committee is helping to focus attention among staffs (NFS, S&PF, and Research) on vegetation needs and issues.

2. Training and Technology Transfer

Pesticide-use training has been conducted by R-1, R-4, R-5, and R-8. Additionally WO/FPM conducted a national pesticide - use management course at Marana, Arizona.

3. Decision Support Systems

- a. PSW is developing decision support systems for vegetation management.
- b. R-6 is developing a decision making system.

4. Environmental and Safety Needs

- a. NAPIAP has been encouraging and funding environmental fate studies.
- b. WO/FPM is actively supporting re-registration of herbicides.
- c. WO/FPM is supporting work to obtain risk assessment data on pesticides through NAPIAP.
- d. WO/FPM is cooperating with the Society of Environmental Toxicology and Chemistry by supporting a platform session at their annual meeting (November 12-16, 1990). The session is Pesticides In Forest Management: Predicting and Observing Fate.
- e. WO/FPM has membership on a national technical advisory committee sponsored by the National Agricultural Chemical Association (NACA). This committee provides technical recommendations to NACA on spray accountancy and drift studies to support pesticide registration and re-registration.
- f. SO, PNW, and NC are conducting environmental fate studies of selected herbicides.

5. Biodiversity and Ecosystem Impacts

The committee noted the emergence of biodiversity as a leading national issue and projects that biodiversity will significantly influence vegetation management practices in the future.

6. Application Technology and Equipment

- a. A project has been established at MTDC to investigate methods of plot marking and navigation systems for aircraft.

- b. An intensive program was begun in 1989 to distribute two computer-based aerial spray models (FSCBG and AGDISP) to industry, academia, and governments. Concurrently an advisory committee and user groups were formed, and hands-on training has been given throughout the United States.
- c. R-8 continues to take the lead in supporting training and use of hand-held herbicide application methods.

B. Committee Member Reports

Reports by committee members Phil Aune, Ken Bentson, Boyd Edwards, Paul Mistretta, Ed Monnig, Don Perala, Mike Ratty, Fay Shon, and Larry Yarger are enclosed in Appendix B.

IV. DISCUSSIONS AND OTHER NEEDS

This committee was established in 1988 to identify needs and to recommend field tests (experiments) and pilot tests of aerially applied herbicides. It became apparent at the 1989 committee meeting that aerial application could not be singled out as a national issue without comparable consideration being given to all other methods of vegetation management. It was, therefore, within this context, that the committee recommended that the charter of this committee be expanded to include all methods of managing vegetation on forest and range lands. Consistent with the expanded charter the committee recognizes the need to recruit others for membership who are nationally recognized specialists in vegetation management.

Other needs include efficacy data on specific herbicides for forest and range use to include plant stress data for timing application, and canopy penetration studies. Regional pesticide-use coordinators could coordinate projects with field users, industry, universities, and researchers. Specific R-5 needs that were discussed included: field evaluation of the Herbi sprayer for application of new herbicide formulations; procedures for sole-source contracting of "turn-key" applications (applicator + herbicide + applicator equipment); and determining aggregate cost of the NEPA process - appeals, project delays, and legal actions resulting associated with herbicide projects.

Some members expressed the need for better coordination and communication among entities conducting vegetation management research. After some discussion it became apparent that this need was, for the most part, being taken care of by various cooperatives, conferences, and committees. With the exception of the Weed Society of America, and other professional societies, most address local, state, or regional needs. The Forest Service does participate in these groups to the extent that their activities relate to forests and range; and use this media to exchange data and information with States, academia, industry, and other federal agencies. It, therefore, appears that the mechanism is in place for technical exchange of information and data.

Ellis Huddleston expressed the interest of New Mexico State University in forest pest management activities. These include pesticide-use training, economic analyses and cost/benefit studies, biodiversity, long-term study plots (forest and range), wind tunnel studies, and a large (section size) field test site.

I would like to take this opportunity to make a personal observation and call attention to a trip report by James H. Miller, of the Southern Forest Experiment Station, Auburn, Alabama, who visited China during April and May 1989 even though we did not discuss it at our steering committee meeting. An Executive Summary of his trip report is included as Appendix C. I suggest everyone with interests in vegetation management, who has not already done so, obtain a copy of James Miller's trip report. As I read the report, I became vividly aware that some land managers have few vegetation management options. Their land has been stripped of native vegetation, their soils sterile and eroded, and their harvests insufficient. While we focus on biodiversity, cultural pest management, and priority research programs, other countries are concerned about basic survival of people and forests. Therefore, while the Forest Service struggles over the use of herbicides, and rejects their use, other countries desperately need to use them and use them effectively for survival. Who will be supporting herbicide-use technology and who will take it to these countries? With our world forestry responsibilities I believe we have a responsibility to maintain our leadership in safe, efficient, and economic use of herbicides.

VI. SUMMARY

The National Steering Committee for Aerial Application of Pesticides - Vegetation Management met in West Sacramento, California on March 7-8, 1990. The committee membership was expanded to include Forest Pest Management Institute (Canada) and academia (New Mexico State University). The committee developed several recommendations; and reviewed and discussed accomplishments related to but not necessarily a result of the committee's 1989 recommendations. The committee identified biodiversity a significant issue that will influence future vegetation management activities. The committee recommends that the committee charter be expanded to include all methods of managing vegetation on forest and range lands, and that its membership be expanded accordingly.

The next meeting of the committee has been tentatively scheduled to be held the week of September 24-26, 1990 at Corvallis, Oregon.

First Report

A REPORT BY THE NATIONAL STEERING COMMITTEE
FOR AERIAL APPLICATION OF PESTICIDES -
VEGETATION MANAGEMENT

April 6, 1989

CONTENTS

I. INTRODUCTION

- A. Committee Members
- B. Committee Objective
- C. Committee Procedures and Background

II. NEEDS AND ISSUES

III. DISCUSSION

IV. SUMMARY

I. INTRODUCTION

A. Committee members

Phil Aune	PSW/TMR	(Redding)
Dave Caraher*	R-6/RO	(Portland)
M.Boyd Edwards*	SE/TMR	(Dry Branch)
Dave Evans	Modoc NF	(Alturas)
Larry Gross	WO/FPM	(Washington)
Charles McMahon	SO/TMR	(Auburn)
Paul Mistretta*	R-8/RO	(Atlanta)
Ed Monnig	R-1/FPM	(Missoula)
Donald Perala	NC/TMR	(Grand Rapids)
William Stein	PNW/TMR	(Corvallis)
Bob Taylor	R-8/NF's-MS	(Jackson)
Larry Yarger	NA/FPM	(Milwaukee)
Jack Barry, Chair	WO/FPM	(Davis)

B. Committee Objective

The objective of the USDA Forest Service (FS) National Steering Committee for Aerial Application of Pesticides - Vegetation Management was to review the needs and recommend pilot project and field testing of aerially applied herbicides. The discussion was expanded by the Committee to include ground applications.

C. Committee Procedures and Background

This is one of four national steering committees appointed by the Chief to report on needs and recommendations for pilot project and field testing. Reports of the other three committees have been submitted previously to the Chief. The committees were established to focus expertise on the need for field evaluation of pesticides, equipment, and strategies. A consolidated summary report of the four committees will be prepared and submitted to the Chief in 1989. The initial meeting of this committee, as reported herein, was held at the Harbor Inn, Sacramento, CA, January 11-12, 1989.

Prior to the meeting, each member was requested to prepare a written report that reflected both technical and non-technical needs and recommendations from the member's work area. In addition to the reports serving as discussion documents at the meeting, they will be included as an appendix to the consolidated summary report. The meeting began with each member presenting a narrative account, followed by a discussion. From these reports and discussions, herbicide application needs and issues were identified. There was no attempt to suggest, except in a few cases, how management might address the needs and issues.

*These persons were unable to attend meeting.

This meeting is one of several initiatives that focus on reducing losses from forest pests. Other activities include the Forest Health Initiative, Forest Insect and Disease Research (FIDR) pesticide activity review, Forest Pest Management (FPM) regional pesticide use reviews, FPM reviews of Methods Application Group (MAG) and Davis units, three regional pesticide technology needs forums, and the three other national steering committees for aerial application of pesticides. These activities, and their resultant reports and action plans, will provide information to a national planning committee composed of representatives from FIDR, FPM, Timber Management (TM), and Timber Management Research (TMR) that will produce a charter and action plan for pesticide use management and coordination in the FS.

II. NEEDS AND ISSUES

A. General

Seven categories of needs and issues were developed by the Committee after the members presentations and discussions. There was some discussion on priorities; however the Committee choose to defer assigning priorities to the next Committee meeting.

B. Needs and Issues

1. Administrative

a. Coordination

Improved coordination and direction are needed nationally within the FS on herbicide research. The Committee could not clearly identify organizational responsibility and direction of herbicide research in the FS and noted that herbicide research appears to be associated with regional rather than national research missions. Herbicide research is not included in any of the current national Priority Research Programs. Program coordination and direction are needed specifically on herbicide research and development, environmental fate, efficacy, and equipment development and testing.

b. Technical Exchange

Technical exchange protocols are needed with Canadian colleagues at FPMI, who are conducting herbicide research. More information exchange is needed with industry and universities. The California Forest Vegetation Management Conference is a good example of information exchange and such exchange should be encouraged within all Regions.

c. FPM Role

The role of FPM in herbicide management and application technology needs to be clearly defined. Due to FPM's broad responsibilities in pesticide-use management, herbicides have been "adopted" by FPM. FPM is not currently staffed nor funded specifically to provide the high level of technical expertise in herbicide-use that is necessary to support quality vegetation management decisions.

d. Management

Ways should be explored to increase management awareness of herbicide-use management needs and issues. This is a challenge to the creativeness of field and staff personnel who know the problems and are responsible for soliciting management support.

e. Responsibility

There is a need to insure that the FS is not perceived to be opposed to aerial spray. Our state and private cooperators, in some cases with similar and in some cases with dissimilar land management objectives, may require frequent use of aerial application. The FS must walk the "tight rope of objectivity" and not be caught in a contradictory position within its National Forest System (NFS) and State and Private Forestry (S&PF) role. The option of aeriaily applying herbicides must be maintained by the FS as supported by the NEPA process.

2. Training and Technology Transfer

a. Training

The Committee identified a need for Regions to provide herbicide-use training. This should include NEPA and tiering from programmatic to site specific documents, safety, application systems, and prescription processes. The Committee also noted that R-8 requires certification of FS contracting officers representatives and applicators for pesticide application projects.

b. Technology Transfer

NFS, Research (RES), and S&PF need to explore ways to deliver new herbicide technology to the user in a planned and systematic manner.

c. Reference Materials

National, Regional, and Forest level publications are needed to support training and for reference by users. Many existing herbicide-use publications are outdated and others need to be developed.

3. Cost Benefit Information and Data

General and specific information and data are needed on the cost benefits of herbicide use in all ecosystems. Although the Committee recognizes that the benefits of herbicides have been established under some conditions, cost benefit information and data are needed relative to: competition thresholds, efficacy, growth and yield, influence of herbicides over the rotation, effects of herbicides on crop trees, aerial vs ground application, loss of productivity associated with no herbicide use, and herbicide use strategies. Such studies require 10-20 years in some cases to complete and with the deferral of aerial spraying there is a continuing delay in delivery of such data.

4. Decision Support Systems

Rapid technological advances in computer modelling, expert systems and artificial intelligence are providing both opportunities and challenges to the resource manager. New tools are becoming available to assist in the timely, safe, and productive use of herbicides; however, this technology needs to be provided to practitioners. The Committee encourages the development and use of modelling, expert systems, and artificial intelligence in vegetation management, and sees an opportunity for the FS to provide national leadership through implementation of this technology.

5. Environmental and Safety Needs

a. Risk Assessment

A coordinated FS effort is needed to identify and pursue data gaps in risk assessments for new herbicides and application systems. Laboratory and field studies, combined with use of aerial application models, would be a sound approach toward filling data gaps in risk management.

b. Spray Accountancy

Field and spray model data are needed to account for and to quantify differences between the amount of herbicide applied by air or by ground methods, and the amount deposited on target. Spray drift is part of this problem. These data are needed for each herbicide and its associated spray systems.

c. Residue and Environmental Fate

As a continuation of spray accountancy, data are needed on the fate of herbicides once they deposit on or drift beyond the target area.

6. Biodiversity and Ecosystem Impact

Biodiversity was discussed by the Committee relative to the use of herbicides. There are opportunities to use herbicides to establish and maintain biodiversity of natural systems and manipulated stands. In contrast, disruptions of biodiversity are also a potential problem. Studies are needed on the role of herbicides in influencing biodiversity on Federal, state, and private lands. Data also are needed on the long-term effects of herbicides on ecosystems. The FS has an opportunity to provide national leadership on this issue.

7. Application Technology and Equipment

a. Turn-key Systems

Some chemical companies are packaging herbicides and application equipment into a single systems being referred to by the industry as turn-key systems. Currently turn-key systems are being used on large industrial ownerships in the South, especially in the coastal plain region. The State of Virginia has a successful state sponsored turn-key system available to small landowners. In some cases the applicator is licensed to use the system with the chemical company accepting liability. The Committee views this as a positive move and perhaps a way to resolve efficacy problems of the past. This approach does, however, pose possible administrative, contractual, and field management problems for the FS. The Committee suggests that those Regions planning to use turn-key systems work closely with their contracting officers.

b. Aircraft Guidance

Technology is available to accurately guide aircraft along predetermined spray swaths. The FS should re-examine aircraft guidance to identify what may be on the shelf, to ascertain technical feasibility, and to determine cost benefits of guidance systems. The Committee does not, however, recommend an aircraft guidance development program at this time.

c. Aerial Application vs Ground Application

Costs, benefits, safety, efficacy, and environmental impact of aerial vs ground application needs to be evaluated by the FS.

d. Aerial Application Models

Agricultural Dispersal (AGDISP) and Forest Service Cramer-Barry-Grim (FSCBG) aerial application models are operational and can be used to produce a catalogue of swath widths and deposition (spray volume, drop size, and particle and/or droplet density) for a range of release heights, wind speeds, relative humidities, temperatures, application rates, drop sizes, particle sizes, and aircraft types. The catalogue is needed by persons planning aerial application projects who may not have access or training in running these models.

e. Drop Size Efficacy

The traditional application rate of high volume (HV), 5 to 10 gallons per acre with spray applied in large drops (500-800 μ m VMD), is costly and sometimes not efficacious. Research by Oregon State University and FPMI supports lower volume application (LV) and even ultra low volume (ULV) with smaller drop sizes, possibly as low as 100 μ m VMD. Data are needed on drop size and its relationship to efficacy and drift. With such data the land manager can make the choice consistent with biological and social/political considerations.

f. Ground Application.

The Committee elected to include ground application within its discussions but not within the scope of this committee's assignment. The status and needs of ground application were discussed and the Committee offers for consideration the following equipment and development needs:

1. The development of integrated (i.e. a combined sprayer/planter) and environmentally safe ground application equipment.

2. The design of ground spray systems that optimize herbicide efficacy by controlling droplet size and pattern.
3. The design and development of low drift and wide swath ground systems.
4. The design of ergonomically designed backpack and tractor equipment.

Most ground application equipment has been borrowed from agronomy, with inherent limitations for forestry. As forest lands become more fragmented and buffer zones increase, the acreage delegated to ground treatment will increase. The Committee recognizes the significant contributions to ground application of herbicides within R-8.

III. DISCUSSION

The Committee noted a broad diversity in herbicide application needs, issues, concerns, and ideas within the committee. Members represented the three major organizational units of the FS, several scientific disciplines, and different geographical areas. This diversity provided a challenging opportunity for the Committee to take a national and broad overview of the herbicide application needs and issues, consistent with the intent of the Committee assignment. The plurality of views, concerns and needs expressed by the Committee members are not a result of disagreement on basic issues. Rather this diversity flows directly from the real differences that exist within and among the regions with respect to landownership and land management objectives for the various NFS and S&PF clients. The meeting also served as a preliminary national scoping session for future direction of herbicide use in the FS.

Two important findings surfaced at the meeting: there is much support for use and development of ground application equipment; and there is need to better define FS policy on aerial application of herbicides before the Committee can recommend specific pilot and field tests.

Ground application appears to be more acceptable to the FS and to the public than aerial application. There are supporting arguments for each method and each method should be evaluated on its own merits for specific site and project objectives. Generally data are lacking to support one application method over the other considering personnel safety, the environment, site characteristics, economics, and the public. The land manager needs scientific data to make wise choices.

Lack of a national policy statement on aerial application of herbicides inhibits research and development, and contributes to confusion on the part of land managers. The Committee believes that the FS shares a common view that the aerial option of applying herbicides must be maintained. A stated national policy therefore, is needed for guidance of NFS, RES, and S&PF;

and for those in the FS who support and those who do not support aerial application. Lack of a national policy is sending mixed signals to FS managers and to our cooperators.

A national policy should consider the following:

1. Needs in areas dominated by assertive environmental groups versus those needs dominated by timber production, where forest management practices are more culturally accepted.
2. Needs of the West, dominated by large contiguous tracts of federal ownership (FS, BLM, etc.), vs the needs of the East dominated by a mosaic of mixed ownerships and tract size some of which are in highly populated areas.
3. Needs of NFS vs need of other ownership that reflect different land management objectives; i.e. to meet multiple use objectives vs more limited land use objectives.
4. Needs of the small private landowner for economical delivery systems vs large corporations who can afford sophisticated and more costly delivery systems.
5. Needs for research and development to strengthen FS capacity to conduct quality herbicide application.
6. Concerns of our publics.

IV. SUMMARY

The National Steering Committee for Aerial Application of Pesticides - Vegetation Management met January 11-12, 1989 in Sacramento, CA. Ten of the 13 committee members were present, each presenting an overview of his work area and needs. The reports identified a diversity of needs and issues relating to application of herbicides, even within the same geographical areas. The plurality of views, concerns and needs expressed by the Committee members are not a result of disagreement on basic issues. Rather this diversity flows directly from the real differences that exist within and among the regions with respect to landownership and land management objectives for the various NFS and S&PF clients. This first committee meeting served to identify needs and issues and provided an opportunity for a general scoping of herbicide-use and management within the FS. Future committee meetings are contingent upon national needs that might best be served by the Committee. Two important findings surfaced during the meeting:

1. There is more concern and support currently for the development of ground application methods than for aerial application methods for use on NFS lands especially in the South; and

2. There is need to better define FS use of aerial application of herbicides before it will be possible to focus on specific FS pilot and field testing needs.

It is recommended that the Chief consider issuing a national policy statement on the aerial application of herbicides.

V. APPENDIX

A. REGIONAL REPORTS

Vegetation Management and Herbicides:
Issues and Trends
in the
Northern Region

For the past several years, noxious weed control has been a primary focus of the pesticide use in the Northern Region. Over that period the noxious weed program has evolved in its scope and direction. Initially the program was driven almost exclusively by interests that were focused on range quality and forage production for cattle. Noxious weed control has a long history on our "range forests" in the eastern part of the Northern Region. Even as the much of the Forest Service was being pressured to reduce or eliminate pesticide use, local constituencies in these range forests were and are clamoring for greater control of exotic species.

In the western part of Region range and livestock interests are much less dominant, although there are some important local exceptions. In these areas noxious weed control has developed a somewhat different constituency. The impact of exotic species on native ecosystems is driving many of these concerns. Within the Forest Service two program areas are increasingly involved in decisions regarding pesticide use to control exotic species. These are the wilderness/recreation program and the wildlife program.

Managers of 4 Wilderness areas are applying pesticides to control noxious weeds. The biggest program is in the Bob Marshall Wilderness complex. This program has received generally favorable public comment in response to two EIS's and the program results.

The 2150 Manual requirement that herbicide use in the wilderness be approved by the Regional Forester is a significant impediment to this type of work. We believe that sufficient capability exists at the Forest level to review the need for this work. Very often wilderness and non-wilderness control projects are grouped in the same NEPA document. Thus the Regional Forester becomes the deciding officer for the entire program. In addition any appeals would be immediately elevated to the Chief's level.

More recently wildlife biologists are showing increased interest in noxious weed control. One project is particularly noteworthy. We are working with the Lolo National Forest on a 500 acre aerial spray project to control spotted knapweed on an important elk winter range. This proposed application is being integrated into a larger area restoration project that will include some burning and some harvest and understory removal to reduce forest density to historic levels. This integrated aspect of this project is most exciting. For a long time herbicide application has been the isolated step child of management techniques. There has been a reluctance to combine these techniques into larger management programs for fear that the whole program be "tarred with the same brush."

Currently all aerial applications of chemical pesticides require an EIS. This represents an inappropriate preemption of the NEPA process. In many cases, this has interfered with our ability to respond to public concerns or resource management problems. For example, a District on the Deerlodge National Forest has a 60 acre administrative pasture surrounded by private land. The local

landowners formed a cooperative group to aerially treat noxious weeds and requested Forest Service involvement. The District had to deny permission to spray the pasture because it did not have the resources to compile an RIS for Forest Service involvement.

The final area I would like to touch on is the use of herbicides in silvicultural site prep. The Region has taken its first tentative steps. We have worked with the Lolo National Forest to set up a trial of the herbicides Pronone (hexazinone) and glyphosate.

It is becoming increasingly clear that new forest management direction and constraints and our new emphasis on ecosystem management techniques will require a new look at herbicide use. The use of herbicides in the forest ecosystem management program may initially strike some as contradictory. Ecosystem management is often interpreted as a lighter hand on the land. There is nothing inherently gentle in some ecosystem processes, witness your average volcanic explosion or even wildfire. However, increased concern for aesthetics, soil disturbance, leave-tree integrity in partial cuts, etc. are limiting the site prep techniques available to the forester. If at the same time we wish to restore early seral, shade intolerant species to a site as our ecosystem studies tell us we should, we must seriously consider spot applications on some sites.

A second Forest that is initiating some herbicide trials is the Idaho Panhandle. The Forest is facing severe tree mortality problems because of root disease impacts in Douglas-fir and grand fir. Grand fir and Douglas-fir have greatly increased their prevalence on the forest as a result of fire suppression, blister rust impacts on white pine, and some selective harvest techniques (e.g. high grading).

The IPNF will be initiating a series of trials next spring to investigate the use of Pronone and Garlon for spot application to control tall brush species. Hydrologists on the IPNF are also interested in restoring trees to riparian areas as an eventual source of large woody debris for pool formation in streams. This program is designed in part to correct some of the problems associated with excessive removal of woody debris in the past.

As a final closing thought, in my dealings with Forest and most particularly District personnel it has become clear to me that the resource specialists are often the most appreciative of the possible role of pesticides in all phases of resource management. Others in the organization who must deal with the social-political aspects of resource management are the audience that requires the greatest attention.

Edward Monnig
June, 1994

DDO

M3

M2

M4

M3

Dave Thomas WO

National Vegetation Management Steering Committee

June 3, 1994

REGION TWO

VEGETATION MANAGEMENT ACTIVITIES

Forest Health Management personnel provide input into Forest Plan revisions, including biodiversity and range of natural variability.

Forest Health Management personnel prepare Vegetation Management Plan for the Crested Butte Mountain Resort Ski Area (GM-UNC-G NF).

Integrated Resource Inventory (IRI) for integration and spatial delineation of basic resource information (land, water, and existing vegetation).

District Production Database (DPD) is a relational database which houses the tabular information related to the maps developed by the IRI process.

Common Survey Data Structure Project--Development of an intra-agency ecological data structure (copy attached).

June 3, 1994

REGION TWO

VEGETATIONMANAGEMENTACTIVITIES

Forest Health Management personnel provide input into Forest Plan revisions, including biodiversity and range of natural variability.

Forest Health Management personnel prepare Vegetation Management Plan for the Crested Butte Mountain Resort Ski Area (GM-UNC-G NF).

Integrated Resource Inventory (IRI)for integration and spatial delineation of basic resource information (land, water, and existing vegetation).

District Production Database (DPD) is a relational database which houses the tabular information related to the maps developed by the IRIprocess.

Common Survey Data Structure Project--Development of an intra-agency ecological data structure (copy attached).

DEVELOPMENT OF AN INTRA-AGENCY ECOLOGICAL DATA STRUCTURE

History

In January of 1993 the Regional Foresters of the Northern, Rocky Mountain, Southwestern, and Intermountain Regions, and the Directors of the Intermountain and Rocky Mountain Research Stations formed an Ecosystem Management Coordination Group made up of Deputy Regional Foresters and Assistant Station Directors. The group was asked to explore a consistent philosophy to Ecosystem Management, and to insure coordination of ecological unit mapping and data base and analysis programs in support of Ecosystem Management.

An Ecosystem Management Coordination Team was designated to organize and facilitate resolution of interregional issues, information sharing and work assignments for ecosystem management tasks.

A primary action item identified was to develop a common set of data definitions and data structures for field survey (point) data. In August of 1993 a meeting was held in Denver. At this meeting, nearly all regions and stations were represented by a diverse group of people who discussed possibilities of integrating resource inventories and developing a common data structure. The result of that meeting was a proposal submitted to the Ecosystem Management Coordination Group to develop a common structure to house an agreed upon set of common data elements for field resource survey data.

In November, 1993 the Deputy Regional Foresters for the Western Regions unanimously agreed to begin a project to develop a common field survey data structure, with the first emphasis on existing vegetation. All regions and stations were invited to participate as partners in the project. At this time, the partnership includes the Northern, Rocky Mountain, Southwestern, Intermountain, Pacific Southwest, and Alaska Regions and the Pacific Northwest Station, Inventory and Economics Program. If the first stages of the vegetation effort are successful and the partners are interested, the project will proceed to develop the data structure for land (soils, geology, etc.) and water.

Project Mission

The project will identify a common set of data elements, agree upon data definitions, design a data structure, and develop core database tables with basic input and edit forms for existing vegetation field resource surveys. The agreed upon structure (core tables) will not be a complete "meet all needs" operational system as we know it from past systems development. The structure will provide a common framework with the flexibility to allow Regions and Stations to develop reports and analysis tools (applications) to meet their specific needs.

Our Vision

All partners will share a common approach to managing ecosystem information. The solution will be developed within the Information Management Framework using the Forest Service Methodology. Tangible results will be produced within the Project 615 Pilot Year and reside on 615 technology. The approach will accommodate existing information and systems as agreed upon. It will be a wise investment for the benefits produced. The result will be shareable information across administrative boundaries, and consistent answers to resource questions.

The Process

The Forest Service Methodology is an Information Engineering approach with the tasks divided into stages, accompanied by key management decisions. Details on the activities for each stage can be found in **CASE*METHOD Tasks and Deliverables** by Richard Barker and in the **Methodology Consensus Report**, 1992. The tasks that need to be carried out for each resource (existing vegetation, land and water) are divided into five major stages: analysis, design, build and document, transition and production.

The project team will be interdisciplinary, including those with previous experience with the Forest Service Methodology and resource specialists familiar with each partner's field survey data needs.

Existing efforts underway which have identified data needs for existing vegetation will be used as a starting point for verification and reconciliation with the project partners.

Managers, users and project sponsors will be kept informed of issues and findings related to each of the stages. It is also important to obtain feedback and decisions at key points during the process.

Products To Be Delivered include the following:

An agreed upon list of required data elements and commonly used optional data elements.

An agreed upon set of standard terms and definitions that are documented in a data dictionary and handbook.

An agreed upon logical and physical data model.

A minimum set of input and edit forms, and reports for verification of the data.

System and user documentation sufficient to augment the testing process.

A version 1 of the structure delivered within the Project 615 Pilot Year.

A plan for implementing, supporting and maintaining the integrated system.

Primary Contacts

Laura Disbrow (R2) and Reuben Weisz (R3) are Co-Project Managers. A Steering Committee comprised of resource specialists representing each of the partner units will assure that the project is meeting the needs of the Stakeholders. Each partner unit will have a primary contact who will be responsible for providing the central point for information sharing. The Core Team consists of co-project managers, several people with technical resource and information engineering expertise, and a contract ORACLE database designer and builder.

Efforts will be made to keep all those with an interest in this project informed of the progress being made. If new partners request to join during the course of the project, a proposal outlining how timelines, deliverables and resources would be effected will be submitted to the Management Stakeholders for approval.

If you would like to be included on the mailing list for those interested in update information, please contact Laura Disbrow (R02A).

VEGETATION MANAGEMENT STEERING COMMITTEE
REGION 3 SUMMARY

TRIAL APPLICATIONS OF LOW IMPACT HERBICIDES TO CONTROL PINYON/JUNIPER TREES

A significant need exists in the Southwest to develop an effective, efficient, and environmentally sound approach to control pinyon and juniper trees. The spread and increased density of these trees is causing unacceptable soil loss, deterioration of watersheds, loss of site productivity, and the loss of native plants and wildlife. Mechanical methods, such as removal with chain saws or chaining, followed by burning, are expensive and have resulted in concerns over environmental damages. Prescribed burning is an option, but it can only be done under limited weather conditions and the resulting smoke causes concerns over air pollution. Fuelwood removal has been used successfully, but sprouting, such as occurs with alligator juniper, and juniper reinvasion have limited the success of this approach. Thus, it was obvious that another method, which could be used separately or in combination with other approaches, needed to be developed.

An approach using a low-volume application of Tordon K (picloram) and Spike 80W (tebuthiuron) in water was evaluated in an attempt to meet the need. Herbicide mixtures were applied to the base of selected trees at ground level using a backpack sprayer. Tordon K (picloram) was tested at 10, 20, 40, and 80 percent concentrations in water and Spike 80W (tebuthiuron) was tested at 0.5 pounds and 1.0 pounds of product in one gallon of water. This low-volume approach was selected to allow applicators to carry sufficient product and carrier into remote areas. The goal was to only treat selected trees and avoid affecting grasses and other nearby plants.

The results of trial applications of both herbicides are promising. With the Tordon K mixtures, control of sprouts and saplings (trees 6 feet in height or less) have exceeded 90 percent (see attached results for the Gila National Forest). Similar control results were achieved on test plots on the Lincoln National Forest. Tebuthiuron may yield similar results, but more time is needed before it's overall effectiveness can be evaluated. Due to the satisfactory results with picloram, several demonstration projects are being planned for this summer. These projects will be 30-50 acres in size.

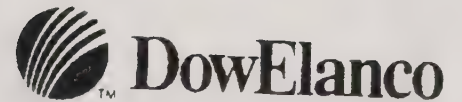
PINYON/JUNIPER HERBICIDE TRIALS

Gila National Forest
North Star Mesa
Evaluated June 1, 1994

<u>Plot No.</u>	<u>Date Treated</u>	<u>Herbicide</u>	<u>Results (Percent)</u>		
			<u>Sprouts</u>	<u>Seedlings</u>	<u>Lq. Trees</u>
1	8/23/93	Tordon K 20%	90+	90+	20
2	8/23/93	Tordon K 40%	90+	90+	20
3	8/23/93	Tordon K 80%	90+	90+	30
4	8/23/93	Spike 80W (1/2 lb./gal.)	60	60	10
5	8/23/93	Spike 80W (1 lb./gal.)	40	40	5
6	11/15/93	Tordon K 10%	70	70	10
7	11/15/93	Tordon K 20%	80	80	10
8	3/7/94	Tordon K 20%	80	80	10
9	3/7/94	Spike 80W (1/2 lb./gal.)	30	30	5

DowElanco
9330 Zionsville Road
Indianapolis, IN 46268-1054

308/3C38
February 7, 1994



Max Williamson
P. O. Box 848
Kennesaw, GA 30144

Dear Mr. Williamson:

This letter is in response to your inquiry regarding use of TORDON* K Herbicide for directed basal bark applications to woody plant stems. As you are aware, TORDON K is registered for control of woody plants on non crop areas. Approved use sites are listed in detail on the TORDON K label. Approved product labeling currently permits a maximum use rate of 2 quarts per acre for general woody plant control. A specimen copy of this labeling is included for your review.

Although use directions for directed applications to the basal bark of woody plants are not provided on the TORDON K label, this treatment method is permissible under FIFRA Section 2 (ee) provided the application rate and use site are in accordance with the approved label. Specifically, FIFRA Section 2 (ee) says: the term "to use any registered pesticide in a manner inconsistent with its labeling"... shall not include (1) applying a pesticide at any dosage, concentration or frequency less than that specified on the label unless specifically prohibited by the labeling, (2) applying a pesticide against any target pest not specified on the labeling if the application is to the site specified on the labeling, or (3) employing any method of application not prohibited by the labeling unless the label specifically states the product may be applied only by methods on the label." In other words, use of TORDON K as a basal stem application would be permissible under FIFRA Section 2 (ee) provided the treatment is made on a labeled use site and does not exceed the maximum labeled product use rate per acre for that site. The restricted use classification of TORDON K Herbicide and all other use precautions, hazards and directions listed on the label would, of course, apply to this use.

We appreciate your interest in this use of TORDON K under FIFRA Section 2 (ee). If we may be of further assistance, please contact DowElanco at any time.

Sincerely,

A handwritten signature in dark ink, appearing to read "John L. Troth".

John L. Troth
Product Development Manager

ca:121093

*Trademark of DowElanco

DowElanco
9330 Zionsville Road
Indianapolis, IN 46268-1054

308/3C38
February 7, 1994



Max Williamson
P. O. Box 848
Kennesaw, GA 30144

Dear Mr. Williamson:

This letter is in response to your inquiry regarding use of SPIKE® 80W Herbicide for directed basal bark applications to woody plant stems. As you are aware, SPIKE 80W is registered for control of woody plants on non crop areas. Approved use sites are listed in detail on the SPIKE 80W label. Approved product labeling currently permits a maximum use rate of 7.5 lb product per acre for woody plant control. A copy of this labeling is included for your review.

Although use directions for directed applications to the basal bark of woody plants are not provided on the SPIKE 80W label, this treatment method is permissible under FIFRA Section 2 (ee) provided the application rate and use site are in accordance with the approved label. Specifically, FIFRA Section 2 (ee) says: the term "to use any registered pesticide in a manner inconsistent with its labeling"... shall not include (1) applying a pesticide at any dosage, concentration or frequency less than that specified on the label unless specifically prohibited by the labeling, (2) applying a pesticide against any target pest not specified on the labeling if the application is to the site specified on the labeling, or (3) employing any method of application not prohibited by the labeling unless the label specifically states the product may be applied only by methods on the label." In other words, use of SPIKE 80W as a basal stem application would be permissible under FIFRA Section 2 (ee) provided the treatment is made on a labeled use site and does not exceed the maximum labeled product use rate per acre for that site. The use precautions, hazards and directions listed on the SPIKE 80W label would, of course, apply to this use.

We appreciate your interest in SPIKE 80W and support this use of the product under FIFRA Section 2 (ee). If we may be of further assistance, please contact DowElanco at any time.

Sincerely,

A handwritten signature in cursive script that reads "Kent D. Redding".

Kent D. Redding
Product Development Manager

ca:121093

*Trademark of DowElanco

SUMMARY OF VEGETATION MANAGEMENT IN REGION 5

Some "old" projects still being worked on (Lost Fire, Lassen NF and several on Sierra NF, maybe some on Stanislaus and Eldorado). Only "new" ('94) project being implemented to date is Complex project on the Mi-Wok RD, Stanislaus NF. This is an approximately 2,500-acre "glyphosate-only" project, where we elected to avoid a certain appeal (which would delay treatment until fall) and dropped triclopyr from the prescriptions.

Several "new" projects in various NEPA stages. Have decisions on Georgetown RD (about 1,200 net acres - glyphosate/triclopyr) and Pacific RD (about 280 net acres - glyphosate/triclopyr/hexazinone) projects on the Eldorado NF. Both projects are in the appeal period and we anticipate appeals on both. The Cleveland EA (Eldorado NF) decision is anticipated soon. Preferred alternative would treat about 7,800 acres using glyphosate, triclopyr, and hexazinone. Appeals of the decision are certain. All the above-projects are ground application. Decisions pending on Hamm-Hasloe project (preferred alternative is about 15,000 acres - all 3 herbicides, including some aerial, Groveland RD, Stanislaus NF) and Paper project (preferred alternative is over 3,000 acres - all 3 herbicides, but primarily aerial, on Mi-Wok RD). Domingo EA decision ((Calaveras RD, Stanislaus NF) involves about 800 acres - ground application of all 3 herbicides - is in the RO on a 2nd-level appeal (old appeal regs). No project proposed for Amador RD, Eldorado NF in '94. EA for proposed Almanor RD, Lassen NF project is not close to being done.

The Angeles NF started implementation of an Arundo donax eradication project for T&E species habitat improvement in the Fall of 1993 and will be continuing that effort over the next three years. Efforts to complete an MOU with the State of California, BLM, and several other Federal agencies on noxious weed management is nearing completion. The State Department of Food and Agriculture is planning some releases of biological control agents on the Shasta-Trinity NF for control of diffuse knapweed and the Modoc NF is working on a NEPA document for control of several noxious weeds in the northeastern part of the State that involves both ground and aerial applications of herbicides.

Stanislaus National Forest, pesticide use management.

Issues, concerns and general excitement.

1. Political decision space in making decisions on NEPA documents for herbicides. Much much more concern about this than there was prior to Jan of 1993.
2. Hexazinone and triclopyr continue to get beat up by environmentalists in press, document comments, field reviews and personal comments by such people. Hexazinone gets the majority of the heat.
3. A fairly large segment of our current group of environmental critics have made some acceptance of need for release and need for glyphosate. As yet they don't fully understand or want to believe that Accord isn't the magic cure all for everything. Also still would rather we didn't use even that chemical.
4. Time span for the administration of ground application contracts. The current Mi-wok contract will take five weeks of about fifteen people's time to administer the application contract. This is five weeks of six or seven days a week of long hours everyday, on a project which due to all the regulations is mentally intensive. Operationally this is seen as a significant barrier to overall reforestation goals (ie. How much can we really do in one year's time??).
5. There have been major letter writing campaigns to Washington offices and large metropolitan newspapers. We have the perception that the size of our proposed projects is attracting attention, that we might not otherwise get.

Current and wild ass guess of near future use. The 1994 info is accurate, rest is from my uninformed brain case.

1994

Mi-wok...currently (as we speak) applying glyphosate as a release treatment on 2500 acres of 1993 and 1994 plantations in the 1987 Complex Burn. All ground applications.

Calaveras...expect to commence applying a tank mix of glyphosate and triclopyr as a release treatment on 306 acres of 1993-1994 plantations in the Old Gulch Burn (1992). All ground applications.

Summit...None

Groveland...During March made the third and final application on young plantations and interplants on the 1987 Complex Burn. Original project was 2500+ acres. This year's treatment was 200 acres. All ground applications

1995

Mi-wok...May apply. An EIS needs to be signed, appeals will need to be dealt with, hopefully we will stay out of court. Financing is also a concern for this District. Potential aerial application.

Calaveras...Hexazinone, glyphosate and gly/tri over 702 acres. Three different types of treatments on varying acres. Old Gulch Burn. All ground applications

Summit...Probably none

Groveland...May apply. An EIS to be signed imminently. Need to go through appeals, possibly court. May treat 3,000 acres.

1996

Mi-wok...Should commence with a large program of applications, ground and aerial. Estimate 3,000+ acres per year next few years.

Calaveras...Should treat 321 acres with glyphosate as a release treatment in the Old Gulch Burn. Ground applications. Some potential for "green" plantation applications this or next year.

Summit...May treat 300 +/- acres this or subsequent years. Document in early stages of preparation. (In 1993 they treated 50+ acres).

Groveland...Hamm/Hasloe EIS should be signed, thru the appeals and fully operational. Should see 5,000 (approx) acres of treatments per year each year for 5 to 7 years. There is approximately 2000 acs of aerial application planned during that time period.

MESSAGE DISPLAY FOR DAVE THOMAS

To D.Thomas:W01C
To F.Burch:W01C
To J.Borrecco
To R.Miksovksy
CC R.Finch:R05F16A
CC J.Brogan
CC M.Landram
CC M.Srago
CC J.Fiske
CC M.Smith:R05F15A
CC D.Bakke:R05F03A
CC T.Simonson:R05F06A
CC S.Danner

From: John Fiske:R05A
Postmark: Jun 01,94 9:39 AM Delivered: Jun 01,94 12:41 PM
Status: Confidential Previously read
Subject: Herbicide project update

Message:

Some "old" projects still being worked on (Lost Fire, Lassen NF and several on Sierra NF, maybe some on Stanislaus and Eldorado). Only "new" ('94) project being implemented to date is Complex (Mi-Wok RD). That's the approximately 2,500-acre "glyphosate-only" project, where we elected to avoid a certain appeal (which would delay treatment until fall) and dropped triclopyr from the prescriptions. Several "new" projects in various NEPA stages. Have decisions on Georgetown (about 1,200 net acres - glyphosate/triclopyr) and Pacific (about 280 net acres - glyphosate/triclopyr/hexazinone) projects. Now in appeal period for both; anticipate appeals on both. Cleveland EA decision anticipated soon. Preferred alternative would treat about 7,800 acres - glyphosate/triclopyr/hexazinone. Certain appeal of decision. All the above-projects are ground application. Decisions pending on Hamm-Hasloe project (preferred alternative is about 15,000 acres - all 3 herbicides, including some aerial, Groveland RD) and Paper project (preferred alternative is over 8,000 acres - all 3 herbicides, but primarily aerial, on Mi-Wok RD). Domingo EA decision (about 800 acres - ground application of all 3 herbicides in RO on 2nd-level appeal - old appeal regs). No project proposed for Amador RD in '94. EA for proposed Almanor RD project not close to being done. We're busy.

-----X-----

--The Vegetation Management EIS authorizes National Forest managers in California to consider use of herbicides as one of the methods available to control competing vegetation.

--The EIS does not directly authorize use of herbicides for specific projects.

--No use of herbicides will be authorized until an analysis of the environmental effects of alternatives available for the treatment of vegetation in a proposed project area has been completed. Specific project environmental analysis is "tiered" to the Vegetation Management EIS for purposes of analyzing local environmental and other effects.

Background: In 1984 the Forest Service suspended use of herbicides on national forests in California pending preparation of an environmental impact statement reviewing all methods used in reforestation. The Pacific Southwest Region issued a Final Environmental Impact Statement for Vegetation Management in December 1988 which analyzed the effects of a range of reforestation methods including herbicides on the environment and human health and safety. The Regional Forester issued his Record of Decision in February 1989. Appeals to the decision were filed. In June 1989, the Chief of the Forest Service agreed to delay implementation of the EIS pending his decision on the appeals. In January 1991, the Chief upheld the Regional Forester decision and lifted the moratorium on use of herbicides. The appellants listed above filed suit in the U.S. District Court for the Eastern District of California in 1991 and the Court issued a summary judgment in favor of the Forest Service in 1992. The appeal to the 9th Circuit was submitted in October 1993, and on July 5, 1994 the court denied the appeal.

As a quick overview of the R-8 program the following high points are mentioned:

- During FY93 we did approximately 72,000 acres of herbicide work, mostly single a.i. applications but with tank mixes used on about 12,000 of those acres. Primary usage was of triclopyr, glyphosate, and hexazinone; imazapyr and sulfometuron methyl were also fairly common in the program. Site prep, release and stand improvement (TSI and WSI) accounted for most of the acreage treated.
- Nursery (primarily fungicide) and seed orchard (primarily insecticide) work continues to be a significant part of our technology transfer and technology development efforts.
- Training of restricted-use-pesticide applicators continues to be a major thrust of our program. We currently have about 450 active certificates in the region.
- We have initiated an attempt to determine all of the relevant (often conflicting) law which applies to our certification program which must comply with FIFRA designated State Lead Agencies in 14 states.
- We have been forced by budget to drop membership in the Auburn University Silvicultural Herbicide Cooperative; attempts are being made to locate the money to ensure that we rejoin during the next fiscal year.
- We have also dropped membership in NPIRS (National Pesticide Information Retrieval System) at Purdue Univ., again, due to cost. Due to other computer compatibility problems and a revised fee structure we do not anticipate rejoining this user group.
- We are in the process of recompiling our "label books" to include labels with the new Worker Protection Standard label statements. This should be accomplished before the end of the summer. We will distribute them to our 100+ ranger districts sometime in the fall.
- We are working to determine our position and responsibilities for herbicides and noxious weed control in our region. Few (if any) plants have been declared "noxious" in R-8 states, but several exotics have become significant nuisances (cogon grass, maleleuca, Brazilian pepper bush, privet hedge, kudzu, ti-ti, etc.).
- We are working to determine prescriptions for the new small pocket management areas (vs. 40 ac clearcuts). While there appears to be a true need for herbicide work in the small selection-cuts, we find that traditional patterns of use are often either ineffective or too effective.
- We are currently having published a Spanish version of the safety training publication "Safety Training for Forestry Herbicide Applicators". It should be available soon.

USDA FOREST SERVICE RESEARCH EFFORTS:

R10/FHM & PNW/INF

COMPETING VEGETATION

EDWARD HOLSTEN

I. INTRODUCTION:

North of Yakutat, there appears to be quite a problem with competing vegetation on cut over lands and lands impacted by spruce beetle. In Prince William Sound and on maritime Sitka spruce sites of the Kenai Peninsula problems with salmon-berry, fern, alders, and Devil's Club abound. Also, throughout south-central and interior Alaska where the spruce bark beetle has caused high percentages of overstory mortality, Calamagrostis sp. (Blue Joint Grass) has quickly invaded many forested sites. This perennial grass inhibits the regeneration of spruce and birch and effectively lowers soil temperature which in turn reduces growth, and thus vigor, of the remaining live spruce, birch, etc.

One of our roles in Forest Health Management is to provide land managers with a "tool box" of techniques to deal with pest problems. It's up to the Land Manager to responsibly select the most efficacious technique(s) while minimizing environmental impacts and risk to humans and wildlife.

II. The Forest Service (Forest Health Management and the Institute of Northern Forestry) initiated, in cooperation with the Department of Forestry--Oregon State University, a three part program dealing with competing vegetation on a maritime Sitka spruce site and on an interior Alaska white spruce site near Fairbanks--

A. First objective is to determine which chemical and mechanical techniques provide control of competing vegetation--

B. Also, in 1991, Environmental Fate studies were initiated to answer the commonly asked question:--"What happens to this material under Alaska conditions??"

C. Third, Forest Pest Management is cooperating in a Forest Service multi-region Risk Assessment pertaining to human health and herbicide use.

Once these three objectives are completed, the land manager will have an up-to-date tool box for dealing with competing vegetation.

Let's look at these three objectives in more detail:

A. In 1989, field studies were initiated in a south-central Alaska maritime Sitka spruce site as well as in an interior Alaska white spruce site and included as objectives:

INTERIOR ALASKA WHITE SPRUCE SITE:

1. Determine efficacy of various conifer release treatments on aspen control.

a. 2nd year results indicated that glyphosate + imazapyr & glyphosate alone gave good results. Mechanical control gave good one season control, but aspen is recovering.

2. Determine efficacy of various conifer release treatments on grass control in interior Alaska.

a. After one growing season--granular hexazinone @ 2lbs/acre gave the best results.

b. Cover in hand scalped plots increased

3. Conifer release treatments for selective control of rose and shrubs:

a. After one season--Imazapyr @ 0.25 lb/acre and glyphosate at 0.75 lb/acre offer best control of rose.

4. White spruce competition study-initiated in 1990 with objectives:

--to determine whether competition slows juvenile growth of white spruce seedlings on good upland sites.

--to evaluate whether site history (i.e., fire, clear cutting, delay in reforestation) influences response of spruce to competition.

--to evaluate how spruce responds to several strategies for managing competition.

Three year results indicate that release from competition increased growth of white spruce, especially for basal area and stem volume growth. Differences in growth response varied by site. On the Burn Unit, year 3 growth increased over untreated plots for four of the five treatments. Only the Yr 2 release did not significantly increase growth. On the New Clearcut, two treatments, Weed-free and Site Prep, increased growth over the Untreated plots, and on the Old Clearcut, only the weed-free treatment resulted in significantly greater growth. This pattern indicates the importance of preventing competition from developing. Once competing species have been allowed to establish, repeated release from competition is necessary for growth increases. Spraying followed by burning eliminated the root systems of some of the competitors. That coupled with warming of the soil appears to account for greater growth over a variety of treatments on the Burn unit.

The good survival in the site preparation treatments indicate that lack of hardening is not the only factor affecting survival. Site preparatin treatments appeared to provide the most consistent and favorable combination of competition, survival, and frost tolerance.

SOUTH-CENTRAL MARITIME SITKA SPRUCE SITE:

1. Determine if conifer release treatments can enhance growth and survival of spruce on naturally regenerated sites.

a. Most herbicides (glyphosate and imazapyr) tested gave excellent control of Sitka alder, salmonberry & Devil's Club. Overall, glyphosate at 1 lb/acre in August gave best control.

2. Determine if conifer release treatments can enhance growth and survival of planted spruce.

a. First year results showed herbicide treatments resulted in less than 10% grass cover, hand scalping averaged 20% & untreated plots averaged 40%.

b. Seedlings easier to plant and soil is much warmer where glyphosate has been applied the previous fall; suggesting that a fall site preparation program would have some merit since glyphosate is not only effective on grass, but also Sitka alder, Devil's Club, and salmonberry.

B. Environmental Fate Studies:

a. Develop comparative estimates of rates of dissipation for 2,4-D, triclopyr, glyphosate, hexazinone & imazapyr on soils and vegetation on two forested sites in Alaska.

b. Estimate mobility of hexazinone and triclopyr in soils on high rainfall coastal forest sites.

c. Develop general models of herbicide persistence based on soil temperature, water content, and leaching.

C. Risk Assessment for Herbicide Use in Forest Service Regions 1,2,3,4 & 10 & on Bonneville Power Administration Sites:

a. Discusses risks associated with non-chemical control measures (i.e. manual, mechanical, biological & risks from prescribed burning).

b. Discusses risks associated with chemical control methods.

c. The final document should be ready within a year.

RECENTLY ESTABLISHED SOUTH-CENTRAL ALASKA STUDIES:

A. Fort Richardson Competition Study:

1. To determine whether competition slows juvenile growth or reduces survival of planted seedlings of white spruce or paper birch.

2. To evaluate how white spruce and paper birch respond to several strategies for managing competition.

3. To determine the degree to which delay in planting following deforestation influences competition level and degree of efficacy of competition control.

Treatments and Methods: (1) Untreated, (2) Weed-free conditions maintained for 5 years, (3) Site preparation applied the fall before planting, and (4) Release immediately after planting.

B. Fort Richardson Site Preparation Trials: Mature Forest Sites:

1. To determine the relative efficacy of several mechanical and chemical site preparation methods for establishing spruce, willow, and birch.

Treatments and Methods: (1) Blade scarification of all vegetation and slash, (2) Band application of herbicide in 1 meter strip along each planting row before planting, (3) Broadcast application of herbicide in fall before planting, and (4) Plant in cleared sites, no site preparation.

C. Fort Richardson Site Preparation Trials: Secondary Sites:

1. To determine the relative efficacy of several mechanical and chemical site preparation methods for establishing spruce, willow, and birch on Fort Richardson resource lands.

Treatments and Methods: (1) Hydro-ax clearing, (2) Hydro-ax clearing plus fertilization, (3) Hydro-ax clearing plus herbicide for herbaceous control, (4) Crushing with a bulldozer, (5) Broadcast application of herbicide to control conifers and (6) No treatment.

D. Fort Richardson--Test of Field Transplant Nursery Technology in South-central Alaska:

1. To establish and test a field conifer transplant facility for quality production, on-site, at low cost, and to identify key practices for field transplant beds.

Treatments and Methods: (1) Untreated, (2) Fertilizer only, (3) Hexazinone only and (4) Fertilizer plus hexazinone.

Second year results indicate that the nursery bed system proved an effective method for growing larger seedlings in the field. Fertilization of the beds resulted in an average 40% gain in size at the end of two years over unfertilized beds. Weeding alone did not result in significant increases in growth and size. Interspecific competition in the beds was low, since Calamagrostis grass had been killed by an application of glyphosate prior to formation of the beds, and reinvasion by weeds was hampered by the high density of the seedlings. A subsample of the plug-2 seedlings will be transplanted into the field to determine overall effectiveness of the nursery bed method for growing seedlings to reforest areas with spruce.

UNITED STATES
DEPARTMENT OF
AGRICULTURE

FOREST
SERVICE

SOUTHERN FOREST EXPERIMENT STATION
DEVALL DRIVE
AUBURN UNIVERSITY, AL 36849-5426
(205) 826-8700 FAX: (205) 821-0037

Reply to: 1350/1360

Date: March 15, 1994

Subject: Veg. Mgmt Meeting - Phoenix 1994

To: DAVE THOMAS

Dave, as you know the Southern Station's focused vegetation management work is largely embedded in our research mission here at Auburn. We recently conducted a review of our program which strongly endorsed our continuing work in that area. We are in the process of developing a new Research Work Unit Description which has been delayed somewhat in order to incorporate a "longleaf pine growth & yield" research area transferred from a research unit in Starkville, MS.

Enclosed is a "current perspective" which shows an overview of where we are & where we are going. Even though it is dated July '93 it is still fairly current except for the longleaf expansion. Also enclosed is a FY 93 technology report which summarizes our work in that area, and I will have some updates on that at the meeting. I will also send you a hard copy of our unit's FY 93 attainment report as additional info that may be useful for the meeting.

To me there are two key issues that need to be highlighted at the meeting.

1. Developing institutional support for the role of vegetation management/herbicides in Ecosystem Management.
- & 2. Developing program & funding support to carry out the research & technology associated with this work.

By the way, have you invited any one from the WO-FMR staff to attend the Phoenix meeting?

/s/ C.K. McMahon

CHARLES K. McMAHON
Project Leader
RWU-4105

Enclosures

1. July '93 Current Perspective
2. FY 93 TT Report
3. FY 93 Attainment Report [hard copy]

July 1993

**U.S. Forest Service Research Work Unit SO-4105
Vegetation Management Research Project - Auburn, AL**

**A Current Perspective
C.K. McMahon, Project Leader**

In 1987, the Forest Service Vegetation Management Research Project at Auburn, AL conducted a program review and revised its **Research Work Unit Description (RWUD)**. The RWUD is a formal Forest Service document which sets forth a strategic direction (divided into problem areas) for the research unit. This is typically followed by a more detailed problem analysis in which specific studies are proposed for problem resolution. As a result of the program review in 1987 the formal title of the project was changed from **"Control of Undesirable Vegetation in Southern Pine Forests"** to **"Environmental Impacts and Ecosystem Responses to Vegetation Management in Southern Forestry."** This change gave more visibility to the environmental and ecological context of studies underway in contrast to the more narrow silvicultural focus of the previous title. The review lead to the selection of the following two broad "problem areas" to be addressed by the unit scientists.

Problem 1 "lack of knowledge about environmental fate and ecosystem impacts of forestry herbicides limits their use in the South."

We now refer to this research problem area by the shorter title:

Environmental fate and ecosystem impacts of forest herbicides

Problem 2 "lack of knowledge of integrated vegetation management prescriptions for pine and pine-hardwood forests and their short- and long-term multi-resource benefits limit their acceptance and use in non-industrial southern forestry."

We now refer to this research problem by the shorter title:

Vegetation management research and prescription development for southern forest ecosystems

In addition to the two vegetation management problems areas listed above, the project has the responsibility to continue the long-term longleaf studies and demonstrations established by a closed out research project formally located at Brewton, AL. The Forest Service classifies this type of carry-over work as a "mission problem." We refer to this work in our program summaries as:

Longleaf Pine Ecology and Management

Also included as a part of this carry-over "mission problem" is the responsibility for administration and management of the 3,000 acre Escambia Experimental Forest near Brewton, AL.

Our project staff is now formally organized into three teams to address the three identified problem areas. Dr. Jerry Michael leads the Problem 1 team and Dr. Jim Miller the Problem 2 team. Dr. Bill Boyer leads the Longleaf mission problem and continues to spend approximately 25 percent of his time on Problem 2 studies, primarily in the prescribed burning area. In 1992, a one year extension (over the normal 5-year term of a RWUD) was granted for our research program.

We are now at a point where we need to step back and re-examine our research direction and revise and update our RWUD. The question/issues we need to address and for which we seek your comments and recommendations are primarily broad questions such as:

- ... Do we need major revisions to our mission and problem areas or just some fine tuning?
- ... Are we addressing the most important environmental, ecological, and silvicultural vegetation management issues?
- ... What broad "problem areas" should be addressed in these next 5 years.

But we also seek your views on specific questions and study needs such as:

- ... Are there studies in place you would like to see sustained?
- ... Are there specific new issues or studies which need to be addressed.

The issues related to the continuation of our long-term longleaf mission problem will not be a central part of the discussion planned for September 14th. That work will be addressed separately by the Southern Station in conjunction with the proposed "Longleaf Pine Ecosystem Restoration" project. This is a joint proposal by the USFS Southern and Southeastern Stations and the USFS Southern Region (Region 8) which is still pending approval and funding.

From past experience, I know the assembled group on September 14th will identify more things to do "than are doable" and we will probably identify some topics that may not easily translate into "researchable approaches." Some of that ambiguity will be sorted out when we prepare a detailed "problem analysis" which will follow the "problem identification and selection" and "RWUD rewrite" steps.

In order to provide an insight to the style and format of a RWUD, we have included a copy of our soon to expire RWUD. In addition to that information and the program highlights to be presented on September 14th, the following comments may help to prompt a question or observation from you.

A. Problem 1

1. At the present time this problem area is the only one in the Forest Service formally chartered to conduct environmental fate research for forest herbicides. As such, the work has national application for both public and private forestry clients.

2. The current support staff and laboratory resources available at the Auburn lab are uniquely suited to conduct herbicide residue analyses and allied method development work. This capability enables studies to be conducted under EPA mandated Good Laboratory Practice (GLP) regulation, and permits timely evaluation of new technology for herbicide monitoring.

3. Presently Problem 1 is broadly stated giving it sufficient flexibility to adjust and respond to shifting priority research programs ranging from the Southern Forest Productivity Program in 1987 to New Perspectives (now Ecosystem Management) in 1991-92.

4. Reflecting an adjustment to shifting priorities, the work in Problem 1 is now more holistic and multi-disciplined as compared to just a few years ago. The "forest dissipation" studies which traced the movement and fate of the chemical herbicides (and metabolites) continues. However, this work is now conducted in collaboration with scientific partners who provide additional talent and resources to address a wider range of objectives such as, the direct and indirect effects of forest herbicides to aquatic and riparian ecosystems.

5. Just a few years ago, the information derived from problem one studies was used to support the risk assessment process for several U.S. Forest Service vegetation management environmental impact statements. We are now focusing on compiling the findings of several fate studies into more comprehensive peer reviewed reports. At the same time, we are giving more attention to dealing with the misperceptions that surround forest herbicides and the bias this creates in the minds of the general public and policy makers. Thus, project scientists are devoting more time to "trouble-shooting" operational problems, advocating risk communication strategies, and supporting technology transfer mechanisms (workshops, symposia, etc.).

6. The problem 1 research team is currently heavily committed to support the water quality objectives associated with the comprehensive "Ecosystem Management" study plan for the Ozark/Ouachita National Forests. The Phase II work (begun in 1991) is expected to continue for several years. Allied studies will also be conducted on the Alum Creek Experimental

collaborative work has now expanded into a more holistic look on how competition treatments affect soil nitrogen, carbon storage, nutrient transfer, and floristic diversity. A manuscript summarizing plant succession during the first 8 years has been completed recently. Future analyses will examine the relationship between vegetation management treatments and; wood properties, the occurrence of fusiform rust, and climate-growth interactions.

6. In recent years, the scope and study objectives associated with Problem 2 have also adjusted to new priorities. We have begun to move beyond the classical silvicultural focus of "prescription development and crop-tree response" to a broader and deeper search for understanding how forest ecosystems respond to vegetation management treatments. Thus we have sought out opportunities to superimpose new objectives on to existing long-term studies. In addition, the Problem 2 team is also committed to support the vegetation management objectives associated with the U.S. Forest Service Ecosystem Management project on the Ozark/Ouachita National Forest in Arkansas.

7. While the work in Problem 2 deals predominately with herbicides as a Vegetation Management option, other options are also being investigated. The role of long-term periodic prescribed burning for woody vegetation control in longleaf ecosystems is a continuing activity. The initial focus of this work was to determine the long-term response of longleaf pine to dormant and growing season burns. In future work, we would like to examine the effects of the fire treatments on other resources, such as the associated plant community and soil properties. Other studies which look at mechanical, manual, and biological (goats) options for special situations help to round out an integrated approach to vegetation management.

As a final comment, I should reveal our own personal bias for the future direction of our vegetation management program.

1. We feel we have properly anticipated and adapted to the expanding environmental/ecological agenda which surround both public and private forest management issues. Thus we do not see any need for a major shift in our research direction within the constraints of our present staff resources.
2. We have carved out two important and successful niche areas in our current problem selection and are open to additional "adaptation" and "fine tuning" to meet projected needs. We continue to support broad rather than narrow problem statements to allow sufficient flexibility to meet shifting priorities over the next 5 years.
3. While we have made major recent commitments to support the National Forest System Ecosystem Management program in Arkansas, we must also remain committed to the needs of the state and private sector. It is the private sector which contains over 70% of the forest resource opportunities in the South.

4. We must find new ways to develop and finance multi-disciplined cooperative research efforts that permit a more holistic approach to understanding how forest vegetation management treatments affect forest resources (both "above" and "below" the ground).
5. We firmly believe in the continuation of our long-term studies, and where possible, the expansion of these studies to address multi-resource issues such as biodiversity, soil productivity, and water quality.

Whether you agree or disagree, I welcome your comments. I look forward to hearing from you... in writing by August 20th and also at our September 14th meeting. A complete bibliography of project publications and a display of our technology transfer accomplishments will be provided at the meeting. Please call me (205-826-8700) if you need additional information about our program.

UNITED STATES
DEPARTMENT OF
AGRICULTURE

FOREST
SERVICE

SOUTHERN FOREST EXPERIMENT STATION
DEVALL DRIVE
AUBURN UNIVERSITY, AL 36849-5426
(205) 826-8700 FAX: (205) 821-0037

Reply to: 1320

Date: September 8, 1993

Subject: Technology Transfer Report

To: JAMES PERDUE
Assistant Director - PA

Enclosed are the five most significant technology transfer accomplishments in FY93 for SO-4105. Also, enclosed is a summary table of other TT accomplishments for the unit.

Instructions for the table need to be more explicit. What is the difference between a speech and a lecture/seminar? What is meant by Training courses? There is too much guess work needed to properly fill out the table.

/s/ C.K. McMahon

CHARLES K. McMAHON
Project Leader
RWU-4105

cc: AD-E

The following are the five most significant technology transfer accomplishments in FY93 from SO-4105

- Published and distributed a comprehensive pesticide training manual "PESTS AND PESTICIDE MANAGEMENT ON SOUTHERN FORESTS." This manual was prepared to assist the southern states in providing certification training for forestry pesticide applicators. An ad hoc committee was formed by the Southern Group of State Foresters to review and compile available information into a generic training aid. Committee members included representatives from the Southern Station, Region 8, university, extension, and state forestry commissions. Editorial assistance was provided by Region 8. Approximately 4,000 copies have been distributed to date. (SO-4105)
- In collaboration with the Southeastern Station (SE-4106) two research summaries were published "Herbicide Dissipation Studies in Southern Forests Ecosystems" and "Fate, Dissipation and Environmental Effects of Pesticides in Southern Forests: A review of a Decade of Research Progress." These reports published in Environmental Toxicology & Chemistry in 1993 summarize over ten years of watershed-scale research on the fate of forestry pesticides used mainly under operational conditions throughout the southern United States. Results indicate that under normal use conditions and when properly applied, forest pesticides do not pose a significant adverse risk to environmental quality. (SO-4105)
- SO-4105 continues to provide support to university sponsored continuing education programs in the South which deal with the proper use, current technology, and environmental impact of forest herbicides. In FY 1993 workshops in Alabama (2), Georgia (1), and South Carolina (1) were supported by 5 presentations and one demonstration given by two unit scientists. This work is an integral part of the planned activities of the Region 8 - SO Station Technology Transfer Plan: Ground Application of Forestry Herbicide II. (SO-4105)
- In April 1993 two unit scientists supported the Air and Water Quality seminar sponsored by the Alabama Cooperative Extension Service (Auburn University) with presentations on Effects of Forestry Smoke on Air Quality and BMP's SMZ's and Water Quality. The seminar was aimed at providing technical information on forest management practices to other professionals responsible for providing information on these topics to the general public. (SO-4105)
- Increasing interest in restoring the longleaf pine ecosystem throughout the Southeast has led to an increasing number of technology transfer activities related to the regeneration and management of this species. In FY93 these included participation in: 4 longleaf workshops, 1 each in Alabama, Georgia, Florida, and North Carolina, with a total of over 700 attendees; 2 training courses for National Forest personnel; and a seminar for a new ecological research organization. Four tours on longleaf pine silviculture and ecology were conducted on the Escambia

Experimental Forest. Assistance with longleaf pine regeneration and management problems was provided to 2 military installations through on-site visits, and to a 3rd through review of a draft forest management plan.
(SO-4105)

TECHNOLOGY TRANSFER ACCOMPLISHMENT SUMMARY

Fiscal Year 1993

<u>TECHNOLOGY TRANSFER ACTIVITIES</u>	<u>Total #</u>
Technology transfer teams participating on	<u>2</u>
Slide shows or videotapes	<u>0</u>
Computer software	<u>1</u>
Poster exhibits	<u>0</u>
Speeches/presentations	<u>29</u>
Lectures/seminars [included in speeches]	<u>0</u>
Workshops/conferences conducted/supported	<u>4</u>
Training courses (supported)	<u>4</u>
Training manual	<u>1</u>
Scientists/students sponsored	<u>1</u>
Consultations/assistance provided	<u>85</u>
Tours provided	<u>9</u>
Library services/information requests	<u>150</u>
Seed/seedlings requests	<u>0</u>
Technology transfer award winners	<u>0</u>

B. COMMITTEE MEMBERS ADDRESSES

Herbicides and Pesticides

ISSUE The use of chemicals to control forest pests within the context of forest management can greatly increase the productivity and growth of forests. However, the public perceives herbicides and pesticides to be a threat to the overall health of people and the environment, and sometimes does not support their use.

BACKGROUND Competing vegetation and harmful epidemic levels of insects are significant impediments to forest health and productivity. Competing vegetation can greatly reduce the establishment and growth of desired forest trees. Forest insects also threaten forest health. Insects such as the Gypsy moth may actively destroy a tree by feeding on its foliage. Other insects may serve as a host for a tree disease, such as the elm bark beetle that carries and transmits Dutch elm disease.

In addition to enhancing timber production potentials, pest management and vegetation control are often necessary to achieve a broad range of benefits such as enhanced wildlife habitat, watershed management, forage production for livestock, and control of exotic and noxious species. Herbicides and pesticides are often the most effective tool to manage and minimize the effect of forest pests.

Herbicides and pesticides need careful evaluation and application to ensure they are used safely. Hazard evaluation requires considering both the chemical toxicity and the potential exposure of nontarget plants, animals, water, and humans.

The federal government regulates pesticide use under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). This law was substantially revised in 1972 and amended in 1988. Current FIFRA regulations require that all pesticide products be registered with

the Environmental Protection Agency (EPA) before they may be sold. Before the EPA can register a pesticide, the product must be tested for its potential to cause cancer, infertility, sterility, birth defects, nerve damage, genetic mutations, or chronic disease. In 1988, Congress approved legislation that requires the EPA to reregister all active ingredients of pesticides originally registered before November 1, 1984.

Disagreement continues between those who believe herbicide and pesticide use should be severely restricted and those who believe safe application will promote forest growth and productivity. Also debated is the applicator's ability and/or willingness to apply herbicides and pesticides safely and responsibly.

Herbicides and pesticides are only two of many available vegetative and pest controls. Prescribed fire and mechanical, silvicultural, and biological methods, alone or in combination, are also effective control measures in certain situations. In some areas, federal courts have restricted federal use of herbicides, stating they are to be used only after integrated use of the alternative controls mentioned above has been attempted. This integrated pest management concept is the primary thrust of current pest management research and a strategy that is being implemented on both public and private forestlands.

POSITION The Society of American Foresters supports the use of EPA registered herbicides and pesticides in the forest environment when they are environmentally safe, cost effective, necessary to control targeted vegetation and forest pests and applied according to the label directions. Measures to ensure responsible application of herbicides and pesticides are also needed. Choice and cost of alternatives to pest management and vegetation control depend on resource management objectives.

WEST COAST REGIONAL CENTER

P.O. Box 458

Corvallis, OR 97339

(503) 752-8801

FAX: (503) 752-8806

NATIONAL COUNCIL OF THE PAPER INDUSTRY FOR AIR AND STREAM IMPROVEMENT, INC.

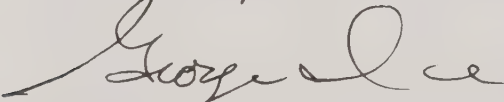
June 30, 1994

Dave Thomas
Forest Pest Management Staff
USDA Forest Service
PO Box 96090
Washington, DC 20090-6090

Dear Dave,

Thank you for the opportunity to participate in the recent National Vegetation Management Steering Committee meeting. It was an excellent group and I thoroughly enjoyed the discussions. Enclosed are materials promised.

Best Wishes,



George Ice
Research Forest Hydrologist

enclosures

cc: Dr. Mike Newton
Dr. Jack Barry
Mike Truax
Dr. Alan Lucier
Julie Thompson

REPORT TO THE NATIONAL VEGETATION MANAGEMENT STEERING COMMITTEE¹

George Ice, PhD²

I INTRODUCTION

NCASI is an environmental research organization which is funded to develop solutions to environmental problems facing the forest products industry. Current forest-related research includes projects on:

- (1) water quality,
- (2) watershed cumulative effects,
- (3) the use of chemicals in seed orchards and nurseries,
- (4) wildlife,
- (5) wetlands,
- (6) air quality,
- (7) forest health and sustainability,
- (8) forestland disposal of solid waste, and
- (9) global climate change.

NCASI has been involved in mill-related research since 1943 and forestland environmental research since 1977. Some forest chemical issues that NCASI has addressed include: (1) an assessment of the potential for groundwater contamination associated with (a) nursery operations and (b) the use of hexazinone for site preparation; (2) streamwater sample collection options for estimating 24-hr exposures from herbicides and the use of trace-enrichment cartridges; and (3) development of monitoring guidelines to assess stream protection associated with aerial application of herbicides. NCASI, in cooperation with the USDA Forest Service, is currently developing an extensive computer literature database dealing with forest practices and water quality protection which includes literature on forest chemical use.

II INFORMATION NEEDS

We recognize a need for leadership by Forest Service researchers on environmental protection associated with aerial chemical applications. There is a need to support appropriate forest chemical treatments on state and private lands, when those treatments are consistent with good stewardship, economic needs, and landowner desires. There is a concern that vegetation management approaches adopted by the USDA Forest Service will be

¹Radisson Hotel, Tempe, Arizona (June 15-16, 1994).

²Forest Hydrologist, National Council of the Paper Industry for Air and Stream Improvement, P.O. Box 458, Corvallis, OR 97339 (503-752-8801; FAX 503-752-8806).

viewed as the "best" management approaches for all lands. Aerial application of herbicides will continue to be used by the industry because of its human and environmental safety, relatively low costs, and efficacy. The Forest Service needs to continue to provide the research leadership which can minimize environmental hazards associated with these chemical applications.

An example of the potential domino impacts of Forest Service decisions is a series of meetings in Washington to develop appropriate forest practice rules to avoid contamination of streams from aerial applications of forest chemicals. At a meeting of the Timber/Fish/Wildlife (TFW) Water Quality Steering Committee, a recommendation that the state adopt the FEMAT buffer requirements for state and private lands in Washington was narrowly defeated. This recommendation came with almost no review of the resource consequences or benefits of the buffers when compared to existing requirements. Given suggestions of up to 250 ft spray buffers around riparian management zones, forestland owners could have been facing up to 550 ft no-spray buffers. The Forest Service has historically provided the environmental research which has demonstrated the utility of spray buffers to avoid direct entry of forest chemicals in streams. This work needs to continue to refine our ability to protect streams and other resources while still maintaining flexibility in how we achieve those objectives. A more complete discussion of the TFW review of forest practices for forest chemicals is attached.

The TFW review of forest practices has prompted a number of specific needs for refinement in the USDA Forest Service supported FSCBG model. FSCBG is widely accepted as the best model currently available to assess deposition and drift from aerial applications. Although very useful, it is limited by lack of a stream component and the flexibility to address complex terrain and buffer conditions. A wish list for FSCBG is shown below:

- (1) Finalize and release the complex terrain module.
- (2) Provide a model that can predict drop size distribution based on nozzle type and orifice size, nozzle orientation, spray system pressure, aircraft velocity, spray mix composition or any other critical variable.
- (3) Provide for non-vegetated spray areas and vegetated buffers around streams.
- (4) Develop and install a stream model which provides for dispersion/advection/adsorption/decay in streams. Test this model under field conditions.

Much of the environmental protection measures now routinely used were adopted as a result of the USDA Forest Service environmental research efforts. We hope that those efforts can continue to provide options to state and private forestland managers as well as federal forests.

WATER QUALITY PROTECTION WITH THE USE OF
HERBICIDES IN FOREST SITE PREPARATION

George Ice, PhD¹ and Walter Megahan²

I INTRODUCTION

The aerial application of herbicides has been used as an effective tool to control unwanted plants in forests for decades. Early research found that avoiding direct application of chemicals into streams was the most effective means of preventing stream contamination. Despite an exemplary record of water-quality protection and lack of mechanisms for long-term impacts, there continues to be public concern about aerial herbicide spray programs. This paper will summarize recent monitoring projects to assess the effectiveness of operations to prevent spray introductions to streams. It will then discuss buffer width and management options to further reduce introduction of chemicals to streams. Finally, the paper will highlight some of the other water-quality issues associated with spray programs.

II EARLY RESEARCH ON PROTECTING STREAMS

The pathway of entry for a chemical into streamwater is a function of the forest environment, the characteristics of the chemical used, the application variables, and the care used in the application. Direct application over water and drift into water have been shown to be by far the most important mechanisms for delivery of chemicals to streams.

Even before buffers were commonly used, Newton reported that stream monitoring rarely found concentrations of herbicides exceeding 50 mg/L in forest streams (1). Early research by the USDA Forest Service in Oregon found that buffers could be used to effectively avoid direct entry of chemicals. This was especially important in swampy areas or in areas with high drainage densities, where rapid expansion of the channel system could cause introduction of chemicals. Some of the highest concentrations of herbicides ever observed occurred when heavy rainfall immediately followed a spray operation (2,200 mg/L for 2,4,5-T in Arkansas) (2). A classic demonstration of buffer effectiveness was a study by Norris comparing the West Myrtle spray project with Camp Creek (3).

¹Research Forest Hydrologist, NCASI PO Box 458, Corvallis, OR (503-752-8801).

²CWE Program Manager, NCASI 615 W St., Port Townsend, WA 98368 (206-379-9915).

"The 600-acre West Myrtle treatment area contained several live streams, while the Camp Creek Unit boundaries were close to but did not include live streams. The concentrations and persistence of 2,4-D in Myrtle Creek were similar to those observed in western Oregon ...when live streams were included in treatment areas. The concentration of 2,4-D in Camp Creek were similar to those found at many locations in western Oregon where live streams were ... excluded from treatment areas" (4).

III OPERATIONAL MONITORING OF WATER-QUALITY PROTECTION

The understanding that contamination of forest streams could be greatly reduced through the use of buffer strips around live streams led to adoption of forest practice rules requiring buffer strips and climatic conditions suitable for controlled applications. For the last two decades monitoring has been conducted to determine whether aerial applications of herbicides in forest are protecting water quality. One of the most monitoring regions has been northern California where the North Coast Water Quality Control Board has been requiring monitoring of all aerial spray operations. In the last four years that program has never shown concentrations that exceed the operational standard for herbicides of 10 ppb. The highest concentrations observed have occurred following the first major rain events after spray operations. This indicates that buffers are being very effective in avoid direct entry of chemicals into live streams.

Both Oregon and Washington have recently completed studies to assess the effectiveness of the forest practices rules in protecting water quality associated with spray operations. In Oregon previous studies had shown a high degree of stream protection. From 1980 to 1987, 153 water samples were collected from various forest operations. Of these 86 percent showed no detectable residue or residues less than 0.001 mg/L (5). Although these results were encouraging, it was difficult to assess the effectiveness of the program because monitoring protocols differed between sites and spray conditions were irregularly reported.

To address these concerns the state monitored 50 herbicide spray operations throughout Western Oregon. Standardized collection protocol were used at each site to get samples that could approximate the 24-hour average concentration. The state further requested that Drs. Logan Norris and Frank Dost of Oregon State University provide the state with water quality criteria suitable for assessing the results of this study. Results of this project found that herbicides could not be detected in 83 percent of the samples. Although this appears similar to the earlier results it must be remembered that herbicide minimum detection have been improved. The highest concentration detected

(24-hr mean) was 0.0026 mg/L. Concentrations detected were 2 to 30 times below the recommended water quality criteria.

A number of factors were considered which may have contributed to introduction of chemicals in streams. Some of the most important factors may have been time of year for application and wind direction.

"Atrazine and triclopyr are commonly used in dormant and early foliar application. All seven of the applications using these herbicides where chemicals reached the streams were conducted in March and April. It is possible that during early spring the weather conditions are more unstable and erratic. Class II drainages in the spray target areas are carrying more water at that time compared to later in the spray season. Both overstory and understory deciduous canopy cover may be absent or not fully developed in the early spring. The other two applications with positive traces of herbicides detected occurred in May and August."

"The forest practice rules require operators to collect and document wind, temperature, and relative humidity measurements during the spray application. Under the forest practice rules, chemical applications must occur in wind speeds less than five miles per hour. Below this standard, the results indicated that wind speeds did not seem to be a factor in determining the likelihood of herbicide drift. In contrast to wind speed, it appears that the potential for spray drift toward a stream is reduced if the dominant wind direction is favorable (ie:, towards the spray unit from the non-target area). Neutral wind conditions (i.e., calm or parallel to the stream) seem to be slightly less likely to result in herbicide reaching the water than unfavorable winds (i.e., towards the stream from the spray unit)" (5).

While this extensive monitoring project was being conducted in Oregon, the Washington Timber/Fish/Wildlife (TFW) Program sponsored an intensive monitoring project to assess the effectiveness of Washington's Forest Practice Rules in preventing contamination of streams. First, the TFW project cooperated with Oregon by expanding the scope of the Norris and Dost review of water quality criteria. The result of that effort was "Proposed Surface Water Quality Criteria for Selected Pesticides Used for Forest Management and Management of Forest Tree Seedling Nurseries and Christmas Tree Plantations in Oregon and Washington" (6). This document presents criteria for commonly used forest chemicals, both to protect human health and also stream organisms. Second, the TFW project intensively monitored seven spray sites. Excellent information was collected on climatic conditions, helicopter flight paths, type of aircraft

and nozzle configuration, and site conditions during and after the spray project. Of the six forest herbicide spray operations monitoring (the seventh site involved insecticides and fungicides on Christmas Trees), none of the sites had chemical concentrations in excess of the recommended water quality criteria. But, the operations were judge to be in violation of the label requirements as determined by the state Department of Agriculture and in violation of the Forest Practices Rules which require that operators avoid "...drift causing direct entry to waters or Riparian Management Areas." Maximum instantaneous herbicide concentration detected during this project was 0.0076 mg/L and maximum 24-hr. average concentration was less than 0.001 mg/L.

IV MANAGEMENT OPTIONS TO REDUCE WATER-QUALITY IMPACTS

Washington has recently convened a Forest Pesticides Technical Advisory Group to evaluate the results of the TFW project and other information and recommend revisions to the rules related to forest herbicide spray operations. Most of the concern is focusing on three issues: (1) the width of the buffer; (2) nozzle and application variables to minimize small droplet formation and reduce the amount of drift; and (3) identification of active ephemeral watercourses.

The width necessary to effectively buffer a stream from herbicide applications will vary greatly depending on the size of droplets, height of application, and especially wind direction. One proposal would be to have varying width buffers to allow near stream spray operations on a stream with favorable wind directions and greater buffering on a side with unfavorable wind directions. The Technical Advisory Committee is considering the use of the aerial spray model, FSCBG to model different conditions for spray operations as a means of testing possible options.

Droplet size can greatly influence the distance of drift. FSCBG may also be used to test possible scenarios of different nozzle types, orientations, speeds, pressures, and other spray variables to assess droplet sizes and fate. There is concern that the rules minimize small droplet formation without sacrificing the efficacy of the chemical.

The difficulty of identifying small watercourses from the air could also be contributing to introduction of chemicals to streams. Improved methods of assessing possible open waters on spray operations and documenting their locations may be recommended.

V CONCLUSIONS

Operators have been remarkable successful in avoiding the introduction of chemicals into forest streams. Despite this record new modifications to the forest practice rules continue to be considered including changes in buffer requirements, implementation of controls on drop size, and better identification of open waters. Other possible concerns that must be considered in the future are impacts to riparian vegetation and groundwater impact from the use of relatively mobile chemicals such as atrazine and hexazinone.

VI LITERATURE CITED

- (1) US EPA "Silvicultural Chemicals and Protection of Water Quality" EPA Region X, Seattle, WA (1973).
- (2) Lawson, E.R., "2,4,5-T Residues in Storm Runoff From Small Watersheds", Jour. Soil Water Cons. 31 (5) 217 (September 1976).
- (3) Norris, L.A., "Chemical Brush Control and Herbicide Residues in the Forest Environment" in Herbicides and Vegetation Management, 102-123, Oregon State Univ. Press, Corvallis, OR (1967).
- (4) Brown, G.W., "Forestry and Water Quality" OSU Bookstore, Corvallis, OR (1980).
- (5) Oregon Dept. of Forestry, "Forest Herbicide Application: Water Quality Study", Forest Practices Program, Salem, OR (January 1992).
- (6) Norris, L.A., Dost, F., "Proposed Surface Water Quality Criteria for Selected Pesticides Used for Forest Management and Management of Forest Tree Seedling Nurseries and Christmas Tree Plantations in Oregon and Washington", Washington TFW, (August 1992).
- (7) Rashin, E., Graber, C., "Effectiveness of Best Management Practices for Aerial Application of Forest Pesticides", Washington Dept. of Ecology, TFW-WQ1-93-001 (October 1993).

EL D. Thomas
6/23/94

Auburn University Silvicultural Herbicide Cooperative

Summary of Survey Results

The results of both our Environmental Impact Research Subcommittee (EIRS) and Auburn University Silvicultural Herbicide Cooperative (AUSHC) membership surveys are enclosed. Most of our members responded to both of the surveys which we sent out in the middle of this summer. In addition, we sent the EIRS survey to 52 agencies and organizations, and received 21 responses back.

FEAR C

AUSHC Survey

The AUSHC membership survey was analyzed several different ways. Generally, we found that the relative rankings of the issues did not change a great deal among the different analyses. Therefore, we felt that the average numeric ranking (0-not important, 10-important) for the 50 issues provided a reliable way to rank the issues (see attached tables). We did not attempt to rank the issues by who would accomplish the research, or by how much involvement there was among all the members for each issue. These questions need to be worked out eventually by our members at our annual meeting, and through our subcommittees and their actual project proposals.

* The survey results show that many issues were considered important by our members, but that other faculty at Auburn, or other organizations should do the actual research. The Coop's strong suit is coordinating and pooling resources for research, and providing guidance or technical assistance. Thus we feel that the Coop and other faculty can effectively and efficiently work together with other organizations to answer the issues that are broad-ranged and complex, or not within our expertise. We have the knowledge to zero in on the right questions that really need answering, and effectively plan for and guide the specialists in their specific area of study.

The results of the AUSHC membership survey show a diverse set of interests among our members. All of the broad issue areas were represented in the top 25 issues, i.e. herbicide testing, vegetation response and interaction effects of herbicides, environmental impacts, practical techniques, enhanced communications, and economic/policy issues. Herbicide testing, vegetation responses, and interaction effects have historically been the main objectives for our Coop. According to the survey results these three issues ranked in the top 4 issues, which shows a strong continuing interest in these areas. The School of Forestry and the Coop are currently studying a few specific issues that would fit under the other three broad areas. Still, there remains many important concerns and questions chasing after very scarce man-hours and funds.

EIRS Survey

The ranking of the top seven EIRS issues was very similar between our members and the outside organizations for the survey results. The basic priority of the issues for both groups could be listed as follows: water

AB

quality and wetlands, environmental benefits of herbicides, herbicide fate and dissipation, enhanced communications, and wildlife impacts. There was, however, disagreement on the ranking of threatened and endangered species, and biodiversity between the two groups within the top seven issues. The last 10 issues had a much more varied ranking between the groups.

The EIRS results were ranked by averaging the numeric responses for all members, for each issue. In general, the other organizations and the AUSHC members had a very similar range in scores. The other organizations had a relatively close range of scores for the top 12 issues (8.62-7.00). The AUSHC members had a wider range across all the issues. Our members gave wetlands and water quality a relatively high ranking compared to the other scores in their survey.

Masterplan

The results from these two surveys, with special emphasis given to the membership survey, have been incorporated into the revised AUSHC masterplan. The objectives of the masterplan embody the priorities of the two surveys, but remain broad-based to allow for a range of issues to be addressed.

AUBURN UNIVERSITY SILVICULTURAL HERBICIDE COOPERATIVE MEMBERSHIP SURVEY RESULTS

ISSUES ARE SORTED IN DESCENDING ORDER OF IMPORTANCE, ACCORDING TO THEIR AVERAGE RANKING SCORE

ISSUES	NO. OF RESPONDENTS	AVE. SCORE
1. Effect of vegetation management (type, degree and timing of weed control at various stages of stand development) on stand growth and yield.	19	7.74
2. Research relating to herbicide use regulations (current and future).	15	7.47
3. Test new promising herbicides for efficacy, as they become available.	19	7.26
4. Effect and interaction of vegetation management and other silvicultural practices (fertilization, fire, thinning, density, etc.) on crop growth.	19	7.16
5. Contamination of water in Wetlands.	16	7.13
6. Identifying Best Management Practices for herbicide use.	17	6.94
7. Impact of vegetation management on plant species diversity.	17	6.47
8. Ground-based methods for prescribing and evaluating herbicide treatments.	19	6.42
9. Develop benefit/cost analysis for environmental costs of herbicides, fire, mechanical and no treatment.	17	6.41
10. Cumulative effects of vegetation management practices (mechanical, chemical and other methods) on the environment.	16	6.38
11. Effect of vegetation management treatments on soils and site quality.	17	6.29
12. Interaction of vegetation management and fertilization.	18	6.22
13. Legislation updates -- state and national.	16	6.06
14. Impact of vegetation management on wildlife habitat.	17	6.06
15. Water quality - stream, pond, and ground water.	16	5.94
16. Test tank mixes, rates and timing of registered herbicides for efficacy.	19	5.89
17. Color weed photographic guide (particularly for herbaceous species).	18	5.89
18. Test surfactants and antileaching additives for weeding (herbaceous weed control).	19	5.84
19. Weed identification short course.	18	5.83
20. Develop cost/benefit for region-wide pine supply.	17	5.82
21. Shifts in plant communities in Wetlands.	16	5.81
22. Comparison of herbicides to alternative weed control methods.	16	5.81
23. Test surfactants and antileaching additives for cleaning (release).	18	5.67
24. Impact of vegetation management on endangered species.	17	5.65
25. Research relating to prescribed fire policy and regulation.	15	5.60
26. Videos, fact sheets, pamphlets on specific environmental issues.	19	5.58
27. Test surfactants and antileaching additives for site prep.	19	5.53
28. Water quality - proper size of buffer zones.	16	5.50
29. Interaction of vegetation management and seedling and planting quality.	17	5.47
30. Develop and evaluate application equipment and methodology.	15	5.33
31. Literature reviews on pertinent issues.	15	5.33
32. Tours, magazine and newspaper articles.	18	5.33
33. Application/certification training.	17	5.29
34. Interaction of vegetation management and stand density.	17	5.24
35. Use of herbicides for stand establishment, enhanced growth and species/density control in natural hardwood stands.	15	5.20
36. Impact of vegetation management on animal species diversity.	16	5.19
37. Use of herbicides for stand establishment, enhanced growth and species/density control in natural pine stands.	17	5.00
38. Interaction of vegetation management and nutrient cycling.	17	5.00
39. State/regional herbicides use data.	17	5.00
40. Effect of vegetation management on pest populations and impacts.	17	4.94
41. Use of herbicides for stand establishment, enhanced growth and species/density control in natural mixed pine/hardwood stands.	16	4.88
42. Effect of vegetation management on wood quality.	16	4.81
43. Research relating to policies regarding vegetation management practices suitable for private versus public lands.	14	4.71
44. Develop benefit/cost analysis for economic impact on region-wide job force.	17	4.71
45. Remote Sensing and photo-based methods for prescribing and evaluating herbicide treatments.	15	4.67
46. Impact on visual aesthetics and perceptions.	16	4.63
47. Interaction of vegetation management and genetics (do families grow differently under differing competition regimes?).	17	4.59
48. Use of herbicides for stand establishment, enhanced growth and species/density control in hardwood plantations.	17	4.35
49. Test surfactants and antileaching additives for pre-harvest.	17	4.24
50. Test surfactants and antileaching additives for TSI.	17	3.59

Owner Shy - 1000
Ind
NFS
NFS

Delphi
2nd round

Auburn University Silvicultural Herbicide Cooperative
Environmental Impacts Research Subcommittee (EIRS) Survey Results
AUSHC Members Survey
The issues are sorted in descending order, according to their average score.
(1=not important, 10=critically important)

Range

SUES	Alabama Forestry Comm.	Boise Cascade	Champion Int.	Chesapeake Corp.	Container Corp.	Georgia Pacific	Inland Rome	Int. Paper	ITT Rayonier	Kimberly Clark	MacMillan Bloedel	Mead Coated Board	Packaging Corp.	Procter & Gamble Cellulose	Scott Paper	Union Camp	USDA Forest Serv.	Westvaco Corp.	Weyerhaeuser Co.	Ave. Score
lands	9	10	8	5	0	10	7	10	10		9	7	8	10	9	8	9	8	5	8.33
ter quality	9	7	0	9	0	9	6	10	10		10	7	10	8	8	7	7	7	4	8.00
ronmental benefits of	8	6	6	7	8	8	5	9	0		9	8	8	6	8	5	10	8	7	7.44
bicide use																				
bicide fate, transport, isipation, and metabolites	4	8	9	2	9	7	0	0	10		0	5	10	9	7	7	9	7	6	7.28
ocation in and out of the	9	9	8	9	7	9	5	10	4		9	7	8	8	2	8	10	3	5	7.22
llection																				
ulture - game and nongame; a) population dynamics, b) beneficial adverse impacts on habitat; c) al are long-term changes	9	6	0	0	0	0	0	7	7		0	3	0	7	7	8	9	8	8	7.06
iversity - species diversity - landscape heterogeneity - pine plantations versus unmanaged lands	5	10	8	4	7	4	3	0	9		0	3	10	7	7	9	10	6	7	6.94
proved application techniques	8	9	6	9	7	9	9	10	3		4	9	2	5	5	6	6	4	8	6.61
atched and endangered species	6	7	7	2	5	8	4	9	9		9	3	5	7	7	8	10	7	3	6.44
fers, a) adjacent lands, b) rains and water	9	8	0	4	8	5	5	4	0		10	7	7	8	0	6	7	4	4	6.44
icity to animals; a) accumulation, b) food safety	7	6	9	3	7	8	5	0	10		4	5	7	5	6	6	5	7	3	6.06
ect of herbicide use on nutrient cing/site quality	4	8	4	5	9	7	7	5	7		4	5	4	5	7	7	6	7	8	6.06
ant succession; a) setback, b) ilient trajectory	2	4	5	8	8	6	3	7	0		0	3	5	0	4	8	9	8	7	5.83
storation/multiple-use benefits of herbicides	8	4	4	7	4	4	8	9	4		5	8	6	0	0	5	6	7	5	5.58
ernatives to herbicides and ernative uses of herbicides	8	2	3	5	7	8	7	9	9		2	7	2	5	3	6	6	3	4	5.33
anagement intensity analysis	4	7	6	1	1	7	7	0	0		0	10	5	5	2	5	5	6	6	4.94
se of herbicides and use of pre-ntive species	4	4	4	2	1	8	0	5	4		4	8	5	5	0	5	6	6	4	4.50

The issues are sorted in descending order, according to their average score.
(1-not important, 10-critically important)

1. giving out money: a) providing dynamics, b) and diverse emotions on holist, c) what are long term

REPORT TO:
NATIONAL STEERING COMMITTEE FOR MANAGEMENT OF VEGETATION
ON FOREST AND RANGE ECOSYSTEMS

June 15-16, 1994
Tempe, Arizona

by

Robert A. Campbell
Forest Pest Management Institute
Canadian Forest Service
Sault Ste. Marie, Ontario
Tel: (705) 759-5740 ext 2428
Fax: (705) 759-5700

I do not pretend to be aware of all forest vegetation management activities in Canada - let alone be able to summarize them. What follows is a brief description of a number of significant initiatives. It represents my familiarity and biases, and thus does not necessarily represent the priorities of any person or agency.

Herbicide Use The last year for which a Canada-wide summary is available is 1992. The attached table "1992 Forest Herbicide Use" was prepared by Ms. Eileen Harvey of the Forest Pest Management Institute. Contact her for further information at tel; (705) 949-9461 or fax: (705) 759-5700. The total area treated in Canada for forest vegetation management was 172,000 ha. At the present time, forest managers have only 2,4-D, glyphosate, hexazinone, triclopyr ester and simazine. Of these, only 2,4-D, glyphosate and hexazinone may be applied aerially. Hexazinone may not be applied within 50 meters of water bodies (not defined) by ground or 100 meters by air. DowElanco has been attempting for some time to obtain an aerial registration for triclopyr ester but so far has been unsuccessful. The major issue appears to be that the regulators want a wide mandatory minimum buffer on the label and DowElanco feels that this would put triclopyr at a competitive disadvantage with glyphosate which does not have a minimum buffer.

Research in Ontario At the present time, the largest forest vegetation management research program in Canada is that of the Ontario Ministry of Natural Resources. This program which goes under the acronym of VMAP (Vegetation Management Alternatives Program) emphasizes alternatives to herbicides. A number of newsletters and reports are produced annually¹. This program is coordinated by Dr. Robert Wagner, Ontario Forest Research Institute, P.O. Box 969, 1235 Queen Street East, Sault Ste. Marie, ON, P6A 5N5, tel: (705) 946-2981 or fax: (705) 946-2030. In order to get on the mailing list, contact VMAP Editor at the preceding address.

¹ For example:

- Buse, L. J., Wagner, R. G., Bell, F. W., and Lautenschlager, R. A. 1994. Vegetation Management Program: survey results of research and development needs. Ontario Forest Research Institute, Sault Ste. Marie, ON. VMAP Tech. Rep. 94-01.
- Wagner, R. G., Buse, L. J., Lautenschlager, R. A., Hollstedt, C., Morneault, A., Pickering, S., Strobl, S., Bell, F. W., and Ter-Mikaelian, M. T. 1993. Vegetation Management Alternatives Program Annual report 1992-93. Ontario Forest Research Institute, Sault Ste. Marie, ON.
- Buse, L. (editor). 1994. The VMAP Report Volume 2, Number 3. Ontario Forest Research Institute, Sault Ste. Marie, ON. (Some topics in this issue: "Spray deposition from a forestry airblast sprayer"; "News about mulches in southern Ontario"; "development of herbicide ground-application technology")

Research in British Columbia The British Columbia Ministry of Forests has an active vegetation management research program which they document in: "Dowsling, Deborah. 1993. A summary of vegetation management research 1993/94. FRDA Memo Miscellaneous No. 215. Ministry of Forests, Victoria, BC." As well as describing ongoing research projects, this publication gives names and addresses of the associated researchers. The best general contact re BC MoF vegetation management research is: Dr. Philip Comeau, Forest Sciences Research Branch, Ministry of Forests, 31 Bastion Square, Victoria, BC, tel: (604) 387-3299 or fax: (604) 387-0046.

Research in Nova Scotia The NS Department of Natural Resources has produced a considerable number of research reports relating to herbicide use. For a complete listing and/or to get on the mailing list, contact Dr. R. Ed Bailey, N.S. Dept. of Natural Resources, P.O. Box 68, Truro, NS, B2N 5B8, tel: (902) 893-5660 or fax: (506) 893-6102.

Research in Quebec The Quebec Ministry of Natural Resources has carried out a lot of good environmental fate and drift monitoring of operational herbicide applications (aerial and ground). They have also done a number of worker exposure studies. Although the publications are in french, most have an english summary. To obtain a list of publications and get on the mailing list, contact: M. Jean Legris, Ministère des Ressources naturelles, Direction de l'environnement forestier, 930 chemin Ste-Foy, Québec, QC, G1S 4X5, tel: (418) 646-8974 or fax: (418) 643-5651. Quebec still has an official goal to cease use of herbicides in forestry within a few years.

Research in the Canadian Forest Service (CFS) As the federal government in Canada owns relatively little forest land, the CFS has only a very small direct forest management activity. The CFS has research establishments in St. John's, Newfoundland; Fredericton, New Brunswick; Quebec City; Petawawa, Ontario; Sault Ste. Marie, Ontario; Edmonton, Alberta; and Victoria, British Columbia. Although there are researchers working on vegetation management at several of the establishments, the overall resources dedicated to this area of research are quite small. Most of the establishments have a newsletter which highlights different facets of the research program and lists recent publications. To get on a mailing list, contact the Publications Section of the appropriate establishment (addresses on attached table "Canadian Forest Service Establishments"). For general information on vegetation management research in the CFS, contact Dr. Robert Campbell, Forest Pest Management Institute, P.O. Box 490, Sault Ste. Marie, ON, P6A 5M7, tel; (705) 759-5740 or fax: (705) 759-5700.

Expert Committee on Weeds This is a national forum open to anyone interested in weed research in any crop. Annual reports are published containing abstracts - mainly on efficacy and crop tolerance trials. The data are also being incorporated into an electronic database which eventually will be accessible from a PC. In the

meantime, an electronic, indexed bibliography of about 1500 forestry and forest nursery abstracts has been created in Pro-Cite. This MS-DOS based software allows the user to locate, for example, all abstracts concerning glyphosate and white spruce. For further information or to get a copy of the electronic bibliography, or to get on the mailing list for copies of the annual forestry abstracts contact: Dr. Robert Campbell, Forest Pest Management Institute, P.O. Box 490, Sault Ste. Marie, On, P6A 5M7, tel: (705) 759-5740 or fax: (705) 759-5700.

Biological Control of Competing Vegetation Research Network (BICOVER).

This research network was established in 1991 with the objective of: "The successful development of economically viable and ecologically sound biological/biorational agents for control of competing vegetation in Canadian Forestry." Current research efforts are on: *Chondrostereum* for control of alder, birch, maple and aspen; *Colletotrichum* for control of fireweed (*Epilobium angustifolium*); *Colletotrichum* and *Bipolaris* for control of bluejoint grass (*Calamagrostis canadensis*)². The contact for the network is: Dr. Dean G. Thompson, Forest Pest Management Institute, P.O. Box 490, Sault Ste. Marie, ON, P6A 5M7; tel: (705) 759-5740 ext 2424 or fax: (705) 759-5700. While Dr. Thompson is on sabbatical from September 1, 1994 till May 1, 1995, the contact is: Dr. Glen Sampson, N.S. Agricultural College, P.O. Box 550, Truro, NS, B2N 5E3; tel: (902) 893-6608 or fax: (902) 895-4547.

Ontario Environmental Assessment

The Ministry of Natural Resources began work in the late 1970's to design a process for planning and conducting timber operations that could pass the test of approval under the provincial *Environmental Assessment Act*. In 1987, the Minister of the Environment decided that a hearing should be held. The hearings began on May 10, 1998 and ran until November 12, 1992 (four and one half years). The Environmental Assessment Board's decision was released on April 20, 1994. The amount of paper generated in the course of this exercise was phenomenal. I testified 13 months into the hearings and already the transcript of the oral part of the hearings was up to 20,000 pages (this did include the cart load of exhibits). The only reasonably concise summary of the process is the decision - and that runs to 561 pages. From the point of view of herbicides, the Board's key findings were: 1) "There is today no effective, practical or affordable alternative to herbicide tending"; 2) "that herbicide tending is essential to the regeneration of future conifer timber supply"; 3) that MNR should undertake research to find alternatives"; 4) "there is no reliable evidence before us establishing that the use of chemical pesticides in timber management poses any significant or unacceptable risk to public health"; 5) "pesticides authorized for use in

² Thompson, D. G. 1994. BICOVER Annual Report 1993-94. Forest Pest Management Institute, Sault Ste. Marie, ON.

forestry do not pose risk of unacceptable environmental disturbance and that the public is entitled to rely on pesticides registration as evidence that chemical herbicides and insecticides are safe if used properly"³. Just as we in Canada have found the USDA Forest Service EIS's informative and useful, I think that Forest Service people will find this interesting. For example, the Ministry took the position that it was not their responsibility to prove that pesticides were safe. Rather, we demonstrated that there is a regulatory process (federal registration and provincial regulation) which ensures that the pesticides are safe when used as directed, and that we are justified in our faith in that process. Clearly, it is not possible to supply interested parties with all of the hearing evidence but if someone is interested in some particular testimony and/or exhibits, we can probably oblige them.

Hazards: Chemical vs Manual Vegetation Management

While he was with the Ontario Ministry of Natural Resources, Craig Howard compiled statistics on the relative hazard to workers (in terms of reported injuries and lost time) of manual vs ground herbicide vs aerial herbicide tending in Ontario forests. The figures show very dramatically that aerial application of herbicides is by far the safest tending method. Mr. Howard is attempting to get the report published in a journal so that it can be cited with greater credibility. He is in the process of revising the manuscript following journal review and I will forward a copy as soon as possible.

Vegetation Management Decision Support

Under the leadership of Dr. Robert Wagner of the Ontario Research Institute an Ontario Forest Vegetation Management Decision Support System is being developed - VMEDSS: Vegetation Management Expert Decision Support System in Ontario. This will be a considerably more sophisticated program than currently available forest vegetation management DSS's such as VegPro and ChESS. Dr. Wagner headed the group which developed VegPro at Oregon State University so he has the right background to lead the project to "build a better mousetrap." The software is a MS-Windows based graphical system which is designed to be very user-friendly. It is divided into two main sections - the Learning Tool and the Decision Support Tool. The learning tool is broken down into two main subsystems - autecology and

³ Koven A., and Martel, E. 1994. Reasons for decision and decision: Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario. Ontario Environmental Assessment Board, Toronto, ON. 561 pp. Copies may be obtained from: Environmental Assessment Board, 2300 Yonge Street, Toronto, ON, M4P 1E4 or Mr. Frank Kennedy, Ontario Ministry of Natural Resources, 70 Foster Drive, Sault Ste. Marie, ON, P6A 6V5; tel: (705) 945-6703.

treatment. The autecology section deals with 200-300 relevant plant species found in Ontario. The user will be able to identify unfamiliar species through an intelligent-identification algorithm as well as obtain autecological information on each species. The treatment section will allow the user to look at a series of potential treatments and get information such as technical specification, efficacy and safety regulations for a particular herbicide, piece of application equipment or mechanical site preparation equipment. The decision support tool uses the information in the learning section to help the user make complex decisions based on site, soil, vegetation conditions, contractor availability, regulatory and fiscal constraints, and technical capabilities of the equipment. The main release of this system is scheduled for the fall of 1996 with interim releases between now and then. For general information on this initiative, contact: Dr. Robert Wagner, Ontario Forest Research Institute, P.O. Box 969, Sault Ste. Marie, ON, P6A 5N5; tel: (705) 946-2981. For information relating to the programming, contact Mr. Michael Rogozynski at the same address and phone as for Dr. Wagner.

Vegetation Monitoring Database My interest in this subject is based on the fact that there are a lot of gaps in our knowledge of effective herbicide use. For example, many potential target species are not listed on the label, and even if a species is on the label the user still does not know how much efficacy can be obtained at what rate. How late in the season can a particular species be treated efficaciously? How much rain, how soon after glyphosate application will cause loss of efficacy? (we know that the 6 hour figure on the label is too short). The species/rate/efficacy gaps become very apparent when one tries to construct a vegetation management decision support system (DSS). Some of the gaps in the DSS tables are usually filled in by having a group of experts make consensual best guesses. Having been through this exercise, I know that some of the expert consensual guesses are pretty weak, and numerous gaps have to be left as gaps. Funds often aren't available to conduct formal replicated research trials to fill the gaps, and researchers often aren't interested in this type of dotting the i's and crossing the t's type of work which is, nevertheless, very important to the forest manager. The rationale behind a treatment monitoring database is that species and treatment conditions for which good information is not available will occur in operational treatment blocks. Although the individual treatment areas often will not have controls or a variety of rates, if a given treatment occurs frequently enough, there is effectively replication over time and space (in some ways, this is more valuable than a single well replicated trial as it will give a better measure of consistency). The USDA Forest Service used such an approach to attempt to determine the cause of the rather erratic efficacy in gypsy moth sprays⁴.

⁴ Twardus, D. B., and Machesky, H. A. 1990. Gypsy moth suppression in the northeast - a 3-year summary of the Treatment Monitoring Database. USDA Forest Service, Morgantown, WV. NA-TP-18.

The major problem in developing a vegetation management treatment monitoring database is the lack of methods which will provide useful information but yet are simple and expensive enough that forest managers will be willing to use them. At the present time, the Ontario Ministry of Natural Resources is not particularly interested in a TMDB. Both the British Columbia Ministry of Forests and a BC forest industry association (Northern Interior Vegetation Management Association [NIVMA]) are very interested in the concept. BC MoF has a couple of assessment methodologies but both are probably too expensive and complex for acceptance by operational forest managers. NIVMA has a simple and inexpensive method but they are rather secretive about it as they want to restrict the database to their membership. I have been talking to both of the BC groups but don't have much to show for it yet (I have not spent much time on the matter due to other commitments and an inability to obtain funding to travel and meet with these parties). My original intention was to attempt to get something started with Canadian colleagues and then link up with interested members of the Steering Committee. My sense is that Steering Committee interest is currently restricted to Paul Mistretta of Region 8.

Silvicultural Vegetation Management

In March 1994, a workshop was held in Sault Ste. Marie, ON with an objective of: "To define research priorities and strategies to develop proactive approaches to prevent or minimize competing vegetation and to increase the competitive ability of desired trees." About 40 person from the U.S. and Canada attended (by invitation). It was decided to establish a research network which would be primarily Canadian with U.S. participation. The approach will emphasize ecosystem and be proactive rather than reactive. As funding for this initiative is not immediately available, it is important to have a simple mechanism for keeping the lines of communication open so that the initial interest and impetus is not lost. Glenn Glover of Auburn University will set up an EMail bulletin board through the IUFRO Vegetation Management Working Group. Presentations of invited speakers will be published as a proceedings. A position paper outlining the strategy (necessary to focus efforts and to justify funding requests) will also be published. The interim coordinator for the network is: Dr. Phillip Reynolds, Forest Pest Management Institute, P.O. Box 490, Sault Ste. Marie, ON, P6A 5M7; tel: (705) 949-9461 or fax: (705) 759-5700. For information on the IUFRO Vegetation Management Working Group or the EMail bulletin board, contact Dr. Glenn Glover, School of Forestry, Auburn University, Auburn, AL, 36849-5418; tel: (205) 844-1019 or fax: (205) 844-1084.

Improved Pesticide Applications Wishlist

In 1991, a survey was sent out persons interested in forestry pesticide application in Canada and the US. Respondents were asked to rank problems for research priority.

The results have been published⁵. One finding from the survey was that there is a considerable amount of technology transfer which needs to be done in this area. Funding was obtained this year from the Spray Efficacy Research Group (SERG)⁶ to hire a consultant (Dr. Doug Embree) to begin the technology transfer process. Persons who responded to the survey (including some members of the Steering Committee) will be contacted by Dr. Embree to provide technology to transfer (for problems that they felt were solved) or to review technology transfer documents (for problems that they considered a high priority for research but which other respondents felt there was already an answer). For further information, contact: Dr. Robert Campbell, Forest Pest Management Institute, P.O. Box 490, Sault Ste. Marie, ON, P6A 5M7, tel; (705) 759-5740 or fax: (705) 759-5700.

Advanced Forest Pest Management Training Program

This program, developed collaboratively by the Forest Pest Management Institute and the Ontario Ministry of Natural Resources, is designed to be an advanced education program in forest pest management for experienced resource managers⁷. There are four courses in the program at present: 1) Advanced Forest Herbicides Course; 2) Integrated Forest Pest Management Course; 3) Forest Insect Management Course; 4) Integrated Pest Management Course for Forest Nurseries. The course potentially of most interest to the Steering Committee is the Advanced Forest Herbicides Course, of which the third is being held September 24 to October 2, 1994⁸. Topics range from autecology to risk perception to environmental impact to aircraft guidance and

⁵ Campbell, R. A., and Howard, C.A. Priorities for forestry herbicide application technology research. Can. J. For. Res. 23: 2204-2212.

Campbell, R. A., and Howard, C.A. Priorities for forestry insecticide application technology research. J. Environ. Sci. Health B29: 591-619.

⁶ The Spray Efficacy Research Group is a voluntary association of forest management, regulatory and research agencies interested in the application of forest pesticides. The aim of SERG is to improve the application technology associated with forest pesticide use.

⁷ Advanced Forest Pest Management Training Program (AFPM) brochure. January 1994 update. Forest Pest Management Institute, Sault Ste. Marie, ON.

⁸ Third Advanced Forest Herbicides Course brochure. Forest Pest Management Institute, Sault Ste. Marie, ON.

Third Advanced Forest Herbicides Course schedule. Forest Pest Management Institute, Sault Ste. Marie, ON.

spray drift models. The faculty are international and include Americans such as Max Williamson (consultant), Dr. Max McCormack (University of Maine), Dr. Mike Newton (Oregon State University), Dr. Shep Zedaker (Virginia Polytech) and Dr. Milt Teske (Continuum Dynamics). For further information, contact: Mr. Craig Howard or Ms. Eileen Harvey, Forest Pest Management Institute, P.O. Box 490, Sault Ste. Marie, ON, P6A 5M7; tel: (705) 949-9461 or fax: (705) 759-5700.

CANADIAN FOREST SERVICE ESTABLISHMENTS

Pacific Forestry Centre
506 West Burnside Road
Victoria, BC
V8Z 1M5
tel: (604) 363-0600
fax: (604) 363-0775

Northern Forestry Centre
5320 - 122 Street
Edmonton, AB
T6H 3S5
tel: (403) 435-7210
fax: (403) 435-7359

Great Lakes Forestry Centre
P.O. Box 490
1219 Queen Street East
Sault Ste. Marie, ON
P6A 5M7
tel: (705) 949-9461
fax: (705) 759-5700

Forest Pest Management Inst.
P.O. Box 490
1219 Queen Street East
Sault Ste. Marie, ON
P6A 5M7
tel: (705) 949-9461
fax: (705) 759-5700

Petawawa National
Forestry Institute
P.O. Box 2000
Chalk River, ON
K0J 1J0
tel: (613) 589-2880
fax: (613) 589-2275

Laurentian Forestry Centre
1055 P.E.P.S. Street
P.O. Box 3800
Ste-Foy, QC
G1V 4C7
tel: (418) 648-5850
fax: (418) 648-5849

Maritimes Forestry Centre
P.O. box 4000
Fredericton, NB
E3B 5P7
tel: (506) 452-3500
fax: (506) 452-3525

Newfoundland Forestry Centre
Building 304, Pleasantville
P.O. Box 6028
St. John's, NF
A1C 5X8
tel: (709) 772-6019
fax: (709) 772-2576

1.2 1992 Forest Herbicide Use

August 23, 1994

Province/ Territory	Product	Area Treated (ha)			Jurisdiction		Total Area Treated (ha)	Rate (kg a.i./ha)	Total Product Applied (kg a.i.) ²
		Aerial		Ground	Private (ha)	Crown (ha)			
		Fixed Wing	Helicopter						
B.C.	2,4-D			124			124	avge 2.2	267
	glyphosate	6,712	22,678	5,616			35,006	avge 1.6	54,493
	triclopyr			416			416	avge 0.9	393
Alta.	glyphosate		480.0			480.0	480.0	2.1	1,016.4
	triclopyr			0.8		0.8	0.8	6.5	5.2
Sask.									0
Man.	glyphosate	451	487	16		954	954	1.4	1717
	triclopyr			10.0		10	10	4.0	40
Ont.	2,4-D	5,005.1		10.2			5015.3	2.4	12,012.8
	glyphosate	60,382.0		2,706.7			63,088.7	2.74	173,015.3
	amitrol			34.4			34.4	4.5	154.8
	simazine	0.0		953.7			953.7	6.37	6,072.5
	hexazinone	642.8		822.7			1,465.5	3.00	4,396.5
Que.	glyphosate	4,497	2,630	24,596	12,947	18,776	31,723	1.5	47,584.05
	hexazinone			986.0		986.0	986.0	2.2	2,169.2
	triclopyr	10.0		56.5	36.0	30.5	66.5	2.0 to 7.7	294.0
	glyp. + trico.	42.0			42.0		42.0	1.1 + 1.4	46.2 + 58.8
N.B.	glyphosate	some	21395.0	965.0	13,722.0	8,638.0	22,360.0	1.4 to 1.7	33,624.2
	hexazinone		40.0	11.0	11.0	40.0	51.0	2.2	106.6
	simazine			431	431		431	3.1	1347.7
N.S.	glyphosate		5,122.1	1,318.4	5,875.8	564.7	6,440.5	1.3	8,372.7
	hexazinone			42.9	42.9		42.9	2.0 to 4.0	85.8 to 171.6
	triclopyr			3.5	2.5	1.0	3.5	1.4 to 3.8	4.9 to 13.3
	simazine			15.6	9.6	6.0	15.6	3.9 to 5.4	60.8 to 84.2
P.E.I.	glyphosate			41.3	326	87	413	1.6	660.9
Nfld	glyphosate		1786.0	163.0	1,433.0	516.0	1,949.0	1.4 to 2.1	3,183.2
Yukon									
N.W.T									
Total							172,072.40		

²Total Product Applied may not equal Total Area Treated X Rate if there were multiple applications at one site or if there was product left over after treatments were applied.

C. FEDERAL ADVISORY COMMITTEE ACT (FACA)

United States
Department of
Agriculture

Forest
Service

Washington
Office

14th & Independence SW
P.O. Box 96090
Washington, DC 20090-6090

Reply to: 1620/1300

Date: July 12, 1994

Subject: Federal Advisory Committee Act (FACA)

To: Regional Foresters, Station Directors, Area Director, IITF
Director, WO Staff Directors

The Federal Advisory Committee Act (FACA) was designed to help "level the playing field," to keep individuals or groups from getting special treatment from the Federal government, and to help ensure equal access for all. The Federal Advisory Committee Act regulates the interactions between Federal and non-Federal entities and the manner in which we obtain advice or recommendations about pending decisions.

I don't think any of us can fault the intent of this law. We are in the business of making public policy and for that reason, we need to be open, fair, and balanced in all of our relationships.

In some cases, complying with FACA will require us to adjust how we involve the public in our programs. In almost all cases, it's not what we do but how we do it that could create problems. No matter what, I expect that you will continue to practice good public involvement and to obey the law. I want you to follow some public involvement principles in your work:

Make It Timely. The process allows enough time for the public to participate fully, with enough advance notice for all activities and crucial points in the process.

Make Your Process "Free." Make sure the public is able to participate at minimum cost and commitment of time, while meeting your public involvement objectives.

Emphasize Fairness. Participants agree that the process is fair, that all views offered are considered.

Practice Openness. Dialogue is welcomed and facilitated among all interests. Anyone who wishes to participate can. Information to the public (documents, etc.) is accessible to all and is in language that people can understand.

Make Involvement Early and Continuous. The public is involved from beginning to end, and relationships are built over the long term.

Make it Tangible. Results of the public's input are clearly demonstrated, and the public understands how public involvement affected the decision or outcome.

Interactions with non-Federal individuals or groups may, if not properly structured, cause you to violate the committee-formation requirements of FACA. Follow the above-listed principles for good public involvement, and look carefully at all your activities. Make sure that you are not offering some groups better access than others. At the same time, it is important to remain mindful of the value of public, State, and local government individual input as an effective method for educating Federal decisionmakers. Remember though, Federal officials generally retain all decisionmaking responsibility, which under the Constitution and current statutory authority cannot be delegated or shared outside the Federal government.

The scope of FACA is broad. Just looking at a single factor such as membership, the frequency of meetings, or the composition of groups may not tell you if your activity is going to present a problem.

Since the application of FACA hinges on the particular facts of each situation, you should contact your regional or WO FACA coordinator and the Office of General Counsel (OGC) if you have any questions or need advice. They can tell you the requirements for an advisory committee, and how to create a committee or expand the role of an existing one. Each Region should establish a regional FACA coordinator if there isn't one already. This person should work closely with the Region's OGC representative.

I have attached some guidelines and questions and answers to help your overall understanding of FACA. Val Chambers, Washington Office Public Affairs (V.Chambers:W01B), is replacing Gordon Meyer as the WO FACA Coordinator and is another resource for you.

I hope you will bear with us as we continue to work with the Department of Justice and OGC on some areas in FACA that need some legal clarification. In the meantime, it's important that we as Conservation Leaders for the 21st Century continue to obey the law, and to practice the principles of good public involvement.

/s/ Jack Ward Thomas

JACK WARD THOMAS
Chief

Attachments
FACA Guidelines
Questions and Answers

cc:
V.Chambers
J.Caplan
S.Yonts-Shepard
OGC
J.Perry
REGIONAL ATTORNEYS

ATTACHMENT 1

FACA GUIDELINES

Look at all of your interactions with non-Federal individuals or groups for possible problems with FACA. Also, consider the "totality of circumstances," which could violate the committee-formation requirements of FACA, such as: the purpose of any meeting, who attends, whether consensual input from participants is an objective or result, frequency of meetings, etc. However, there are situations where you are much less likely to need a chartered advisory committee:

1. Occasional Meetings with External Organizations. These include unsolicited requests from organizations and individuals whose main purpose is to present to the Forest Service their views on a particular matter.

If the Forest Service calls such meetings, we should do so in an open manner where everybody is welcome to attend, and reaching consensus is not the aim of the meeting. However, a series of meetings with the same people, particularly if one group becomes a preferred source of information, could violate the committee formation requirements of FACA.

Note that a single meeting to discuss a particular topic is not likely to be a problem, as would having a series of somewhat regularly scheduled meetings.

However, the Forest Service may hold a public series of focus groups, fora, or roundtable discussions to listen to people's individual views. These sessions must be open and structured in such a way as to get a wide variety of viewpoints instead of consensus among groups, as in the Delphi process.

Any meeting requested by outside organizations or individuals where the Forest Service is promoting or funding the activity, or is in some way controlling the meeting, is more likely to require compliance with the committee formation requirements of FACA.

2. Meetings with Individuals. A single meeting between an individual and a Forest Service employee for the purpose of exchanging information and viewpoints would not be a problem.

4. Public meetings. Public or town meetings that are open to all are generally not a problem. The meetings should be **widely advertised** and should provide an opportunity for the public to submit written and verbal comments. Again, federal employees should not conduct or use public meetings to develop consensual advice from groups. Under no circumstances should FACA be cited as a reason not to attend an ad hoc meeting with a group of concerned citizens.

5. Permit and Contract Administration. Meetings with permittees and contractors concerning routine matters directly related to the particular permit or contract are normally not a problem. FACA considerations would arise if the meetings were used for broader input on general matters of policy or management that may affect the permit and/or contract relationship.

6. Peer Review by Research. A "blind" review from individuals is normally not a problem. However, getting consensual input from a group of scientists, that includes non-Federal members and is for the purpose of advising on policy, may be a violation of FACA.

7. MOUs and Cooperative/Challenge Cost-Share Agreements. While not exempt from FACA consideration, the agreements themselves are not normally a problem because they derive from authority which establishes who may participate and what the respective responsibilities are. However, any consultations which are established by such agreements could be in violation of the committee formation requirements of FACA.

8. FS Employees Representing the Agency on Outside, non-Forest Service Committees. These are normally not a problem, unless you are using the group to solicit recommendations to take back to the Forest Service.

Situations where you are much more likely to need a chartered advisory committee:

1. Partnerships. Partnerships are agreements between the Forest Service and certain groups and individuals. "Partners" generally come from groups that will be affected by the direction which policy and management take. Their input customarily reflects their particular interests, and is in the form of advice and recommendations to decisionmakers. The partnership would likely violate the committee formation requirements of FACA unless it only provides support in the way of funds, labor, materials, or promotion for a particular project or program. Remember, too, that the opportunity to form a partnership should be available to any other interested group.

2. Collaborative Activities. You should examine collaborative planning and collaborative learning activities to make sure that you are not using a consensus exercise to obtain advice and recommendations without a charter. Remember that collaborative decisionmaking to the extent that it delegates final federal authority to a non-Federal person or group is beyond the agency's legal authority. The Administrative Procedures Act and the Constitution grant authorities to the Federal Government that cannot be delegated or shared with outside individuals or organizations. The Organic Act and other laws establish the Forest Service as the responsible agency for managing the national forests and grasslands. Avoid, too, the appearance of delegating decisionmaking outside the agency.

3. Alternatives for Environmental Analyses Developed by Interested Citizens and Groups. Many ID teams have invited outside groups to develop and submit alternatives. This is an extremely important part of "scoping" and public involvement. As a matter of fundamental fairness, it is necessary to

notify and involve a broad array of interested groups and individuals. However, FACA is a real concern if this becomes a consensus exercise with non-Federal participation in a process to develop alternatives jointly with the Forest Service. Written submissions of these non-Federally developed alternatives can be made along with all other information which is solicited as part of the scoping process. Thus, the decisionmaker assembles a detailed and representative information base which fully incorporates the public's ideas and concerns in the alternative development stage. Scoping notices to the public may include solicitation for alternatives from commenters. The decision, however, rests with the decisionmaker. The decisionmaker should not solicit or accept recommendations and advice from the public at the time of decisionmaking.

4. Regular Meetings with Interest Groups. Regularly scheduled (although not necessarily frequent) meetings with a group for the purpose of obtaining the consensus from the group's members would likely violate the committee formation requirements of FACA. Such meetings would become even more inappropriate as the group became the agency's preferred source of public input, the group established working committees with the Forest Service to carry on assignments between regularly scheduled meetings, and the agenda became a joint interest group and agency effort to address continuing problems.

For further information:

Consult such standard references as the Act itself, the Departmental Regulation (D.R. 1041-1, 2-8-93), GSA Regulations at 41 C.F.R. 101-6.1001 - 101-6.1035 (1990), and the GSA'S Memorandum on the application of the FACA to Intergovernmental Contacts, 3/21/94.

ATTACHMENT 2

QUESTIONS AND ANSWERS ON THE FEDERAL ADVISORY COMMITTEE ACT (FACA) July 12, 1994

1. What is FACA?

FACA is short for the "Federal Advisory Committee Act", which was enacted by Congress in 1972. FACA applies to all federal agencies and is administered by the General Service Administration.

2. What is the purpose of FACA?

FACA regulates the use of advisory committees by the President and federal agencies for the purpose of obtaining advice and recommendations. In passing FACA, Congress had three broad goals:

- a. reducing the influence of special interest groups in the policy-making process;
- b. providing the public equal access to the policy-making process; and
- c. controlling the costs of advisory committees.

3. What is the legal definition of "advisory committee?"

Whether or not a group is utilized as an "advisory committee" is a key issue at the heart of most FACA suits. Both sides of litigation will present arguments to the court that the group in question is or is not an "advisory committee" within the meaning of FACA.

The statute itself defines the term "advisory committee" as any committee, board, commission, council, conference, panel, task force, or other similar group which is

- a. established by statute (by Congress), or
 - b. established or utilized by the President, or
 - c. established or utilized by one or more agencies,
- in the interest of obtaining advice or recommendations for one or more federal agencies or officers.

A committee does not have to be established (i.e., created) by the President, agency, or statute. An existing group or organization can be "utilized" by the President or agency in such a way that it becomes an advisory committee under FACA.

FACA does exempt some groups, most notably any committee which is composed wholly of full-time employees of the Federal government. A lawsuit may turn on whether or not a member of a committee is in fact a full-time Federal employee for purposes of FACA.

4. What does FACA require to establish an advisory committee.

Before establishing an advisory committee, the President or Federal government must:

- a. determine the advisory committee to be in the public interest;
- b. determine that the functions of the committee could not be performed by an existing committee or by one or more Federal agencies;
- c. ensure that the committee will be:
 - (1) fairly balanced in terms of the points of view represented, and
 - (2) fairly balanced in terms of the functions to be performed;
- d. ensure the advisory committee will not be inappropriately influenced by any special interest;
- e. provide adequate staff and resources; and
- f. publish notice in the Federal Register.

5. What does FACA require to charter an advisory committee?

Before an advisory committee can begin meeting, its charter must be published, reviewed and approved. The charter must include:

- a. the committee's objectives and scope of activity;
- b. the agency or official to whom the committee reports;
- c. a description of the duties, and if the duties are not solely advisory, a specification of the authority for such functions;
- d. an estimated annual operating cost;
- e. estimated number of meetings; and
- f. estimated termination date of the advisory committee.

6. What does FACA require to operate an Advisory Committee?

To ensure public access to the work of the advisory committee, FACA requires that:

- a. each meeting be open to the public;
- b. a notice of meetings is published in the Federal Register;
- c. interested individuals are allowed to speak before, or submit statements to the committee;
- d. records, reports, working papers, and other documents prepared and/or used by the committee be made available to the public;
- e. minutes of each meeting must be taken, and be made available to the public;
- f. a designated federal employee attend each meeting;
- g. a designated federal employee approve the meeting's agendas and minutes; and
- h. an Advisory Committee Management Officer who ensures the above procedures are established and efficiently followed, is designated within each agency.

7. What factors will a court look to in determining whether or not a violation of FACA has occurred?

There are few characteristics that by themselves make a group clearly a FACA Advisory Committee. Court decisions look at "the totality of circumstances" surrounding the group, which means that a variety of factors are weighed and evaluated to determine if FACA applies to the group. Some important factors include:

- a. Who formed the group and why? If the group was formed without federal participation then it is less likely to be a FACA Advisory Committee (however, it could become a FACA Advisory Committee if it is utilized as such by a federal agency). If the group was formed with federal participation and then made independent to avoid becoming a FACA Advisory Committee, then the changes may be scrutinized to ensure it is not a mere subterfuge.
- b. Does anybody other than regular full-time federal employees participate in the group? If any participant's status as a federal employee is irregular, it may need further analysis. Federal payment for participating on the advisory committee does not make a participant a federal employee for purposes of FACA. If a non-federal employee "participates" with the group but is not a "member", then the difference between "participant" and "member" status may be scrutinized to ensure it is not a mere subterfuge.
- c. Does the group give advice or recommendations about specific federal decisions? If the group is only collecting data or factual information, then it is less likely to be a FACA Advisory Committee. However, there is not always a clear line between data and advice. If members of the group are non-technical and often act as policy makers or advisors, then the product of the group is more likely to be advice than information collection.
- d. Can the group be considered to be exerting "undue influence" on a specific federal decision? If the group appears to have a special influence on federal decisions, unfair or unequal to other groups, then it is more likely to be a FACA Advisory Committee. Evidence of undue influence might appear in government documents that justify decisions on the basis of the group's recommendation.
- e. Do the group members work to reach consensus or independently? If the group attempts to present a consensus recommendation, it is more likely to be a FACA Advisory Committee.

Example A: meetings between a federal agency and a group do constitute an advisory committee when the agency both solicited the consensus comments and intended to use the comments in drafting policy or regulations.

Example B: meetings between a federal agency and a group do not constitute an advisory committee when the group initiated the meetings and the agency was simply providing the group comments on a group-initiated proposal.

Example C: meetings between a federal agency and scientists do not constitute advisory committee meetings when the scientists worked independently and presented the agency with independent opinions.

8. So, how did the court in Northwest Forest Resource Council v Espy (D.D.C. 3/21/94), use these factors in reaching its decision that FEMAT is an advisory committee under FACA?

The court held that the Forest Ecosystem Management Assessment Team (FEMAT) was an advisory committee which should have complied with FACA. The court found that FEMAT was established by the President and provided advice and recommendations to federal officials. The court held that certain state university professors were not "full-time federal employees" under FACA even though they were paid by the federal government for their participation on FEMAT for several months, and thus rejected the government's argument that FEMAT qualified for FACA statutory exemption for committees composed wholly of full-time employees of the Federal government.

Therefore, the court found that FEMAT was a FACA Advisory Committee that needed to follow the requirements of FACA.

9. What are the consequences of the court's decision in Northwest Forest Resource Council v. Espy (D.D.C. 3/21/94)?

FEMAT was declared to have been an advisory committee under FACA. However, even though the President relied on advice that came to him from a process that violated FACA, the court did not enjoin the Administration from relying on FEMAT in developing regulations implementing the President's Forest Plan, but rather left that issue for later courts to decide. The court's reluctance to order an injunction stems from concerns about Constitutional separation of powers. Several lawsuits filed subsequent to the FEMAT decision seek to enjoin reliance on FEMAT now that a FACA violation has been declared by a court.

10. If advisory committees are established pertaining to the President's plan, will forest products interests have a right to participate as members of the committee?

Membership on an advisory committee is not a right. FACA requires that the membership of the advisory committee "be fairly balanced in terms of the points of view represented and the functions to be performed..." If the President wants advice on a narrow topic, he can appoint a narrow range of viewpoints, although they should represent a balance of views within that range. Therefore, if the President wants advice on an "ecosystem management" forest plan, he can appoint experts who adhere to that theory, but he should also include a reasonable balance of other views.

In addition, meetings and documents produced by this committee must be open to the public. For example, forest products interests and anyone else would have the right to attend meetings and request working papers; and, the committee would have to ensure that notices of its meetings were published in the Federal Register.

11. Would meetings held between an interest group and a federal agency to discuss issues of concern to the interest group violate the public access and procedural requirements of FACA?

If the interest group initiated the meetings and if in the meetings the flow of information went one way, from the group to the federal agency, FACA would most likely not be violated because:

- a. the agency did not establish the group;
- b. the agency did not utilize the group to aid in its formation of policy. The agency did not seek advice from the group to aid specific policy/regulatory formation. Instead, the group was simply transmitting its concerns to the agency. If the agency began asking the group for its advice on specific issues and if the agency planned to use that advice to develop regulations, then FACA would most likely apply.

Remember, though, to look at the totality of circumstances.

12. How can federal agencies interact with organizations and/or coalition of organizations (e.g., Applegate Partnership, Quincy Library Group) without violating FACA?

There are several ways the federal agencies can practice good public involvement and still uphold the law:

One-on-one meetings - where the meeting is initiated by the organization, or where the meetings is initiated by the Federal agency on an ad hoc basis. **CAUTION:** A Federal agency using "outside-initiated" meetings or irregular, intermittent "agency-initiated" meetings as a dodge to attempt to avoid FACA would violate the spirit of FACA and very likely the letter as well. The GSA regulations, 41 CFR 101-6.1004 (j), say a group must be chartered if the agency uses it "recurrently as a preferred source," but does not define these terms. FACA questions must always be answered under a "totality of the circumstances," according to GSA.

Public meetings - open meetings (town halls, hearings, "county commissioner"-style meetings, etc.) where the meeting is publicly announced and open to all.

Mailings - periodic (monthly, quarterly, etc.) reports or newsletters to a standard mailing list including organizations and their members. Mailings can include response opportunities such as preference polls, postage-paid comment forms, etc.

Other media - computer bulletin boards, fax-back telephone systems, pre-recorded voice telephone systems, etc. As a general rule, any method of communication that is open to anyone.

13. Can Federal agencies continue to interact with organizations and/or coalitions of organizations that are covered under an MOU, which identifies common goals and interests, and obey the law?

Yes, as long as the Federal agencies are not members of the organization or coalition of organizations. The agencies can continue to work with them in ways outlined above. The organization or coalition of organizations would have the form of any other "group" the Forest Service works with, hears from, negotiates with, etc., while managing NFS lands. The following apply to all interactions with groups:

- a. Decisionmaking authority on National Forest System lands cannot be shared or delegated outside of the federal government. Encroachment on this authority by a group or other entity is inappropriate.
- b. The utilization of a group to obtain advice or recommendations on matters of Federal jurisdiction or authority is regulated by FACA.

Note: FACA is not just about decisionmaking-- it is about obtaining advice or recommendations on any matter.

14. Can a Federal employee be a liaison to a group, and does interaction with that group create a problem with FACA?

No, if the role of a "liaison" is performed consistently with the methods of communication outlined above. FACA is not implicated by the sole reason of having a liaison. If the role of "liaison" includes the utilization of a group to obtain advice or recommendations, FACA would become an issue. A full-time liaison to a group would certainly contribute to the "totality of the circumstances" indicating that the Forest Service could be "utilizing" the "group" on a "recurrent" basis as a "primary source" of advice.

15. Groups and individuals will continue to make proposals to the Federal agencies regarding ecosystem management across land ownerships, economic development, community participation methods, etc. If the Federal agencies agree to act on these ideas, will the action be a violation of FACA? And how can we avoid that?

There is no violation of FACA here if the input is written, or comes via one of the mechanisms listed under #10 above. Any person or group can make a "proposal for Federal action" to a Federal agency. After the idea is passed on to the Federal agency, a Federal official must exercise discretion over whether the idea is one that the Federal agency will invest resources in to run it through the Federal decisionmaking process. Obviously, many ideas are simply disregarded at an early stage because the agency cannot act on all the ideas that come forward.

16. Can an agency facility be utilized for meetings of groups?

Yes, assuming the meetings are conducted within the guidelines outlined above. There is no restriction in FACA regarding using Federal facilities to meet with groups.

For example, suppose one day a group shows up on the Ranger District doorstep and wants to tell the Ranger a thing or two. Balancing the many tasks for the day, the Ranger decides that there is, indeed, time for this group-initiated meeting. This situation poses no FACA problem. As with all FACA questions, however, we must consider whether meeting in a Forest Service facility contributes to the "totality of the circumstances."

17. Can Federal employees attend group meetings on their own time (off work or on annual leave) if such attendance is not intended to represent the agencies, but rather as private citizens?

A Federal employee attending a group meeting as a private citizen would perhaps not be an obvious instance of a Federal official "utilizing a group to obtain advice or recommendations." However, a Forest Service employee or any other Government employee does not automatically lose Federal status at the end of his/her workday or while on annual leave.

First, we should turn to conduct-of-employees regulations, which admonish employees not to take "action...which might result in or create the appearance of" giving preferential treatment to any person, losing impartiality, or making a Governmental decision outside of official channels, 7 CFR 0.735-11(a). Outside activities are prohibited if they may be construed by the public to be official acts of the Department or if they may tend to bring criticism of the Department, 7 CFR 0.735-13(a).

Second, circumstances may not be under the control of the Federal employee. For example, it would be widely known in the group who is and who is not a Forest Service employee. Other members of the group outside the control of or even contrary to the will of the employee may give "advice and recommendations" to the employee in a way that violates the intent, or perhaps even the letter of FACA. A Forest Service employee at such a meeting takes on the burden of avoiding FACA problems as well as ethical problems.

Finally, an agency using "private citizen" attendance as a dodge to attempt to avoid FACA would violate the spirit of FACA and very likely the letter, as well. We have to consider the "totality of the circumstances."

18. Does contracting create a problem with FACA? For example, the agencies are initiating a forest health assessment for a given watershed. The team will be agency ecologists and specialists, and college professor(s). Will a contract with the college professor(s) (identifying them as working as agents of and in interest of the federal government) be acceptable under FACA?

A group including Forest Service employees and Forest Service contractors is not regulated by FACA.

There is a larger question of whether a contractor can, in turn, use a group to conduct the contractor's work. The answer depends on circumstances surrounding

the formation of the group and the use of the advice the group provides. If the group is first formed by the agency, and then a contractor is retained to conduct the work of the group and channel the group's advice back to the agency, it is likely that this could violate FACA. On the other hand, if the contractor is retained first, and the contractor decides to assemble the group to help the contractor, this would not implicate FACA. The difference is that the agency establishes and utilizes the group in the first instance, but the contractor establishes and utilizes the group in the second.

19. There are lots of questions about how NEPA can be facilitated without violating FACA. What if input received is in the form of a "recommendation" or "advice"? Can we meet with neighborhood groups to gather input in addition to advertised public meetings.?

Yes, two-way communication is legal, especially under the public involvement mechanisms for NEPA. What is regulated by FACA is Federal agency establishment or utilization of a group for the purpose of obtaining consensus advice or recommendations:

"Establishment or utilization" as used in FACA generally means the Federal agency brings the group together. A clear example would be where the agency picks the members of the group and meets with them regularly under an agency-prepared agenda for express and limited purposes. These circumstances do not rise in the NEPA context, where Federal agency consults with or takes comments in an open process from pre-existing groups. Even if a group is not pre-existing, FACA does not regulate the group if it is formed without any Federal involvement. And even if a group were pulled together by a Federal agency for the purpose of streamlining the scoping process, for example, FACA would only regulate the group as a general rule if it were to meet regularly over time with constant membership. It's fairly safe to say that any scoping meeting or public hearing under the NEPA process is not regulated by FACA.

"Group" as used in FACA generally means two or more individuals, not all of whom are full-time Federal employees. Federal contractors, "special employees," and non-Federal employees on duty for a Federal agency under the Intergovernmental Personnel Act for purposes of FACA should be counted as Federal employees.

"Advice or recommendations" as used in FACA generally means for the ultimate legal question to be answered, or the ultimate choice between alternatives to be made, by a Federal official. For example, a group formed for fact-finding, evidence-gathering, developing methodology, using the scientific method, etc., probably would not be regulated by FACA. On the other hand, a group formed to give advice to a Federal official on which discretionary course of conduct to follow most likely would be. A group that answers the question; "What is the stream's temperature?" as a general rule is not regulated by FACA. On the other hand, a group that answers the question, "What temperature should it be?", is regulated by FACA.

No group meeting under the umbrella of a NEPA process is automatically exempt from or in compliance with FACA. Nor can one say that there is necessarily a conflict between the public involvement requirements of NEPA and the regulations of FACA. Both NEPA and FACA must be complied with. An agency is free to receive input during the scoping portion of the NEPA process from any

interested or affected group without first going through FACA regulations. The analysis of FACA implications is based on the "totality of the circumstances."

officially assigned federal duties, and none of the formalities that would be expected to attend such assignments were ever observed. See 5 U.S.C. § 3374.

Even if the Court were to find that the state university professors were "federal employees," they would not qualify as being "full-time" unless, as the defendants propose, they be given credit for full-time work because they each averaged over 40 hours per week for FEMAT during its existence. But the exception for "full-time officers and employees" only supports the purposes of FACA if the term as used in FACA is interpreted as drawing a distinction between regular civil servants and outsiders or hybrids; it clearly has no place in FACA as a wage-and-hour rule. As the AAPS court noted, "FACA would be rather easy to avoid if an agency could simply appoint 10 private citizens as special government employees for two days, and then have the committee receive the section 3(2) exemption as a body composed of full-time government employment," AAPS 997 F.2d at 915.

The defendants then submit that academics on advisory committees shouldn't count as outsiders, because they do not implicate Congress' underlying concern that advisory committees not be dominated by "industry leaders and the like with substantial parochial interest in the outcome." Natural Resources Defense Council, Inc. v. Herrington, 637 F. Supp. 116, 120 (D.D.C. 1986). Nowhere, however, does FACA or its history support the proposition that the only special interests with which Congress was concerned were those inspired by mercenary motives. Scholars no less than business people have been known to have personal

agendas. And the composition of FEMAT, as a whole-- federal and otherwise-- at least suggests, as plaintiff alleges, that the vast majority of them were pro-"ecosystem management," having minimal sympathy for the forest products industry.

The defendants next argue that FEMAT was not an "advisory committee" because it made only a "technical assessment" of various management options, but did not provide "policy advice." The Court finds, however, that FEMAT absolutely did render policy advice to the President. FEMAT's mandate was to develop and analyze the effects of alternative ecosystem management policy options for presentation to the Administration, and it did so. The Administration considered, so far as is shown, only the work of FEMAT in selecting a policy to implement, and chose one of the options FEMAT proposed. FEMAT directly influenced the President's ultimate policy decision.

Moreover, there is nothing in the statutory language or case law to support the defendants' assertion that FACA should not apply to "advisory committees" consisting only of technicians who supply the decision-makers with data. To the contrary, several courts have applied FACA in just such circumstances. See Public Citizen v. National Advisory Committee on Microbiological Criteria for Foods, 886 F.2d 419 (D.C. Cir. 1989) (FACA applied to committee to develop microbiological criteria by which the safety and wholesomeness of food could be assessed; National Nutritional Foods Ass'n v. Califano, 603 F.2d 327 (2d Cir. 1979) (single meeting of five experts in the field of obesity research was subject to FACA.)

III.

Having concluded that FEMAT was subject to FACA, the Court also finds that FEMAT was convened and did its work in violation of the Act's requirements for the proper conduct of "advisory committee" business. Indeed, it is undisputed that: FEMAT refused to open its meetings to NFRC and the public in violation of section 10(a)(1); FEMAT failed to publish notice of meetings in the Federal Register contrary to section 10(a)(2); FEMAT failed to allow volunteers to attend meetings or otherwise participate in its activities in violation of section 10(a)(3); FEMAT failed to make its records and other documents available for public inspection as prescribed by section 10(b); FEMAT failed to keep detailed minutes of meetings in violation of section 10(c); the establishment of FEMAT was not properly authorized as required by section 9(a); FEMAT failed to file an advisory committee charter in violation of Section 9(c); FEMAT made no attempt to fairly balance its membership as required by section 5(b)(2); FEMAT took no special precautions to assure that its advice and recommendations were not inappropriately influenced by special interests in violation of section 5(b)(3); and FEMAT did not comply with the termination provisions of sections 10(d) and 14.

The defendants argue that if, as the Court has found, FEMAT was an "advisory committee" under FACA whose advice was integral to the Administration's decision to adopt the Forest Plan, the application of FACA to the FEMAT proceedings would transgress the constitutional doctrine of the separation of powers, thus

rendering it inevitable that the Court must declare the statute unconstitutional as applied.

Both the Supreme Court majority in Public Citizen and the D.C. Circuit majority in AAPS were able, by adroit semantics and near-clairvoyant discernment of legislative intent, to avoid that drastic result in the circumstances of those cases, but not, however, without difficulty, and in doing so incurred stern disapprobation from concurring brethren who were less squeamish. In Public Citizen, the Supreme Court employed a narrow construction of the word "utilized" (as in "utilized by the President" in FACA) to avoid the constitutional implications of applying FACA to a privately organized and funded group of "advisors" who had, for years before FACA, been regularly offering its opinions of prospective federal judges to the Department of Justice. Proceeding on an opposite track, the AAPS court adopted an expansive definition of the term "federal officer or employee" as used in FACA to embrace the President's spouse de facto to enable the court to avoid a similar constitutional dilemma. Had she not been deemed such, her presence on the Health Care Task Force -- the sole "outsider" -- would have subjected the Task Force to FACA despite its "operational proximity to the President himself." AAPS, 997 F.2d at 909. ⁶

⁶ The Court notes in passing that the decision-making apparatus employed by the President in AAPS is not dissimilar to that involved here. As the Health Care Task Force was to the "working group" in AAPS, so the Executive Committee is to FEMAT in this case, and the AAPS court made clear that the constitutional

This Court has, however, rejected the opportunities offered by defendants to engage in similar creative statutory construction and interpretation, and no others have manifested themselves spontaneously. Nevertheless, the importance of avoiding the constitutional issue to the last, acknowledged by both the Public Citizen and AAPS courts, 491 U.S. at 465-67; 997 F.2d at 912, n.12, must still be respected if at all possible, and the avenue by which escape lies for this Court is found in the measure of the remedy to be given on the plaintiff's complaint.

FACA itself does not prescribe remedies for violations of its requirements. Thus, the Court must exercise its general equitable powers (while observing its own constitutional limitations) to fashion any relief that would represent an appropriate remedy for plaintiff's injuries caused by the violation of FACA. Franklin v. Gwinnett County Public Schools, ___ U.S. ___, 112 S.Ct. 1028, 1033-35 (1992).

NFRC has prayed for the following relief:

1. a declaratory judgement to the effect that FACA was violated by FEMAT as set out above;
2. an order that defendants make all FEMAT records immediately available to plaintiffs, whether or not the documents would be subject to a FOIA exemption;
3. an order directing FEMAT to issue a report summarizing its activities at meetings, as required by section 10(d);
4. an order directing the leader of FEMAT to prepare detailed minutes of each meeting; and

5. an order prohibiting the government from utilizing the FEMAT report as a basis for federal policy or regulations until FEMAT completes an advisory process in compliance with FACA.

No reason is shown not to enter the requested declaratory judgment; indeed, if there is any conclusion inevitable from the foregoing, it is the declaratory judgment prayed must be given.

As the production of all FEMAT documents, the defendants claim that they have assembled all documents from all 600-plus FEMAT "participants," and that those documents which are not subject to FOIA request pending. It will fall to any reviewing court to determine the merit of the defendants' decisions to withhold any documents on FOIA-exemption grounds when administrative appeals are exhausted.

As to plaintiff's request for preparation of a final report and the minutes of meetings, the defendants contend that the FEMAT Report itself satisfies the requirements of section 10(d) and that preparation of some comparable document at this late date would be redundant, superfluous, and overly burdensome; the FEMAT Report constitutes a sufficient "summary of [the committee's] activities and such related matters as would be informative to the public," say defendants, and the Court agrees.

To the extent that plaintiff seeks the minutes of meetings to reveal FEMAT's internal deliberations and decisionmaking processes, there are, as plaintiff itself acknowledges, more effective ways to gather this information. There is, moreover, no evidence that any "minutes," as such, exist.

Finally, plaintiff seeks an order enjoining the Administrative from relying upon the FEMAT report to promulgate regulations implementing its Forest Plan. Such an injunction is, of course, the relief of which plaintiff is most desirous. In the Court's opinion, however, such an injunction would exceed the injury presently to be redressed. There is nothing in the record to suggest that the FEMAT Report, or its advice and recommendations to the President, would have in any way been altered had FACA been complied with to the letter. It would, moreover, be premature. At the moment the Forest Plan is merely a plan; it has yet to be translated into action. There will be time enough when the Forest Plan is implemented to determine if any harm it does to NFRC and its constituents can be traced to FEMAT.

Of greatest significance to the Court in declining to issue the injunction is the affront it would represent to the separation-of-powers principle. The Court is aware of not authority upon which it could confidently rely in concluding that it may forbid the President and his Cabinet to act upon advice that comes to them from any source, however irregular.⁷ There is no "exclusionary rule" applicable to the decisionmaking processes of the President. And it is certainly no less presumptuous than would be a similar instruction from Congress to the President -- as plaintiff deems FACA to be -- as to what he can and cannot consider in executing the duties of his office.

7

But see Alabama-Tombigbee Rivers Coalition

It is sufficient for present purposes, and all that this Court concludes it should award, that plaintiff have the declaratory judgment it has prayed for. The effect and consequences of that judgment will be left to other courts and/or other cases.

It is, therefore, this ____ day of March, 1994.

ORDERED, that defendant's motion for summary judgment is denied, and plaintiff's motion for summary judgment is granted in part; and it is

FURTHER ORDERED, ADJUDGED and DECREED, that the Forest Ecosystem Management Assessment Team was and is an advisory committee subject to the Federal Advisory Committee Act, 5 U.S.C. App. 2 (1988), and that its proceedings from approximately April 2, 1993, to July 16, 1993, were conducted in violation of the Act.

_____/s/_____
Thomas Penfield Jackson
U.S. District Judge

General Services Administration
Office of Administration
Washington, DC 20405

March 21, 1994

MEMORANDUM FOR COMMITTEE MANAGEMENT OFFICERS

FROM: JAMES L. DEAN, DIRECTOR /s/
COMMITTEE MANAGEMENT SECRETARIAT

SUBJECT: Application of the Federal Advisory Committee Act
(FACA) to Intergovernmental Contacts

This memorandum provides guidance regarding the applicability of the Federal Advisory Committee Act (FACA) to contacts between the Federal Government, and State, local, and tribal governments. We are providing this information to you as requested by the Office of Information and Regulatory Affairs (OIRA), Office of Management and Budget (OMB).

While FACA's scope encompasses many contacts between Federal officials and individuals who are not full-time employees of the Executive Branch, it does not extend to all such interactions. Circumstances will require the application of the Act in some situations; however, there are many instances where it will not be necessary to establish advisory committees. In determining the applicability of the Act to your specific needs, you should consult GSA's regulations located at 41 CFR Part 101-6 and your agency's Office of General Counsel. Some of the most frequently raised questions involving contacts with individuals who are not full-time employees of the Federal Government are discussed in this memorandum.

I. BACKGROUND

President Clinton recently announced several initiatives to promote more effective intergovernmental cooperation in the development and implementation of Federal regulatory actions. These efforts are the result of recommendations issued as part of the National Performance Review lead by Vice President Gore, as well as the Administration's commitment to streamline the Executive Branch's regulatory review process and encourage more direct interaction with entities affected by Federal policies.

Executive Order 12866

Executive Order 12866 of September 30, 1993, entitled "Regulatory Planning and Review," encourages agencies to seek to "harmonize Federal regulatory actions with related State, local, and tribal

directed to "explore and, where appropriate, use consensual mechanisms for developing regulations, including negotiated rulemaking." No specific approach for the accomplishment of these goals is required, but the directive states it should be an "effective process" dictated by the order and magnitude of the issues involved.

Executive Order 12875

Executive Order 12875 of October 26, 1993, entitled "Enhancing the Intergovernmental Partnership," was issued to reduce the imposition of nonstatutory unfunded mandates upon State, local, and tribal governments. The Order directs each agency to establish a meaningful and timely mechanism for consultation with these affected parties in the development of regulatory proposals containing significant nonstatutory unfunded mandates.

On January 11, 1994, the Administrator of OIRA issued detailed guidance covering the scope, nature, and timing of intergovernmental contacts incident to the implementation of E.O. 12875. While agencies have been given broad latitude to determine which combination of tools to employ in accomplishing the President's goals, including the use of negotiated rulemaking advisory committees, they are required to integrate their activities into the ongoing regulatory process defined by E.O. 12866.

II. INTERACTIONS SUBJECT TO FACA

The use of Federal advisory committees, subject to FACA, in accomplishing the goals outlined by E.O. 12866 and E.O. 12875 is one option in developing an effective process for facilitating intergovernmental coordination. While the Administration encourages the appropriate use of advisory committees to accomplish rulemaking, the establishment of new advisory committees is subject to review by OMB under the terms of Executive Order 12838 of February 10, 1993, entitled "Termination and Limitation of Federal Advisory Committees," and GSA as required by the Act.

The following situations will require agencies to comply with FACA and E.O. 12838:

(A) Negotiated Rulemaking Committees. The use of advisory committees to accomplish rulemaking in selected circumstances has been effectively employed by several agencies, including the Department of Transportation and the Environmental Protection Agency. Advisory committees may be used to accomplish rulemaking where there is a clear need to obtain advice and recommendations while developing a Federal regulatory or other position in a relatively short timeframe. Such committees are subject to FACA as required by the Negotiated Rulemaking Act.

(B) Use of Existing Advisory Committees. As part of its overall regulatory strategy, agencies may require supplemental advice and recommendations to support ongoing activities. In such cases, the membership and/or structure of existing advisory committees may be expanded or modified to obtain additional information. While consultation with GSA is required to amend the charter of an existing FACA committee, the additional review requirements of E.O. 12838 do not apply if the scope of the original committee is not significantly altered.

Regulations promulgated by GSA provide substantial flexibility in addressing the operating requirements of existing advisory committees, including subgroups created to achieve their goals. For example, section 101-6.1004 provides a detailed listing of committee meetings or groups which are not covered by FACA and/or other regulatory requirements.

(C) General FACA Coverage. In determining coverage under FACA, agencies must continue to apply a "totality of circumstances" analysis against the functions to be performed by an individual or group providing advice or recommendations. Since the Act's scope is quite broad and based upon the functions to be performed, various factors such as the desire for consensus, frequency of meetings, or rotation of membership individually may not determine coverage. Accordingly, the application of FACA to specific circumstances should be reviewed with GSA, and the agency's Committee Management Officer and Office of General Counsel.

III. INTERACTIONS NOT SUBJECT TO FACA

As part of the regulatory process, agencies may receive unsolicited requests from pre-existing external organizations, including industry associations or associations of State, local, or tribal officials, to express their views. Conversely, the Government may seek to obtain information from such groups to achieve maximum participation in the decisionmaking process. There are several avenues for obtaining advice and recommendations from such groups which are not subject to FACA. The extent to which these types of interactions are not subject to the Act have been addressed in GSA's governmentwide regulations implementing FACA and recent Court decisions, and are summarized below.

(A) Meetings With Pre-Existing External Groups. From time-to-time agencies may receive unsolicited requests from preexisting external groups to provide their views on pending actions. Such meetings, whose primary purpose is to present to the Government the views of the group on a particular matter are not subject to FACA. Similarly, the Executive Branch may under certain circumstances initiate meetings with pre-existing external groups for the purpose of obtaining views and information without applying the Act.

Exempting such meetings with pre-existing external groups from

funded, or otherwise controlled the creation and/or activities of the group being consulted. Accordingly, such interactions may be subject to FACA if these factors are present, even though the group existed previously.

(B) Meetings with Individuals. A meeting between an individual and Federal official(s) is not covered by FACA [see 41 CFR 101-6.1004(h)].

(C) Meetings with a Group of Individuals. Meetings with a group of individuals for the purpose of obtaining individual opinions, rather than advice or recommendations as a group, are not covered by FACA [see 41 CFR 101-6.1004(i)]. However, such a group may be covered by the Act if it is relied upon as a de facto advisory committee over a period of time, e.g. if the agency asks the group to prepare advice or recommendations, or its activities for all intents and purposes assume the appearance of an advisory committee as defined by the Act.

For example, as part of the regulatory process, an agency may choose to use a series of "focus groups," "forums," or "roundtables" to obtain the views of individual attendees. Such mechanisms serve as useful conduits for obtaining a broad range of information required to achieve a complete regulatory analysis. Typically, this approach involves a series of sessions structured to obtain information from individuals, and attendees are rotated to provide a diversity of viewpoints.

(D) Public Meetings. Public or "town" meetings which are open to all interested parties for the purpose of exchanging views and information are not subject to FACA. Such meetings are frequently used by many agencies as a means of collecting a wide range of opinions in a short period of time. Often public meetings, "hearings," or "town meetings" are widely advertised and include invitations for both oral and written input into an agency's decisionmaking process.

IV. SUMMARY AND CONCLUSION

Establishing an effective and meaningful intergovernmental dialogue as part of the Administration's efforts to reduce nonstatutory unfunded mandates and streamline the regulatory review process will require the use of several approaches, including advisory committees. Agencies having specific questions or concerns regarding advisory committees may contact GSA's Committee Management Secretariat at (202) 273-3556.

cc: Office of Information and Regulatory Affairs
Office of Management and Budget (OIRA/OMB)

Federal Advisory Committee Act of 1972

* Act of October 6, 1972 (P.L. 92-463, 86 Stat. 770; 5 U.S.C. Appendix 2)

Findings and Purposes

Sec. 2. (a) The Congress finds that there are numerous committees, boards, commissions, councils, and similar groups which have been established to advise officers and agencies in the executive branch of the federal government and that they are frequently a useful and beneficial means of furnishing expert advice, ideas, and diverse opinions to the federal government.

(b) The Congress further finds and declares that-

(1) the need for many existing advisory committees has not been adequately reviewed;

(2) new advisory committees should be established only when they are determined to be essential and their number should be kept to the minimum necessary;

(3) advisory committees should be terminated when they are no longer carrying out the purposes for which they were established;

(4) standards and uniform procedures should govern the establishment, operation, administration, and duration of advisory committees;

(5) the Congress and the public should be kept informed with respect to the number, purpose, membership, activities, and cost of advisory committees; and

(6) the function of advisory committees should be advisory only, and that all matters under their consideration should be determined, in accordance with law, by the official, agency, or officer involved.

Applicability

Sec. 4. (a) The provisions of this Act or of any rule, order, or regulation promulgated under this Act shall apply to each advisory committee except to the extent that any Act of Congress establishing any such advisory committee specifically provides otherwise.

* * * *

(c) Nothing in this Act shall be construed to apply to any local civic group whose primary function is that of rendering a public service with respect to a federal program, or any State or local committee, council, board, commission, or similar group established to advise or make recommendations to State or local officials or agencies.

Responsibilities of the President

Sec. 6.

* * * *

(c) The President shall, not later than March 31 of each calendar year (after the year in which this Act is enacted), make an annual report to the Congress on the activities, status, and changes in the composition of advisory committees in existence during the preceding calendar year. The report shall contain the name of every advisory committee, the date of and authority for its creation, its termination date or the date it is to make a report, its functions, a reference to the reports it has submitted, a statement of whether it is an ad hoc or continuing body, the dates of its meetings, the names and

occupations of its current members, and the total estimated annual cost to the United States to fund, service, supply, and maintain such committee. Such report shall include a list of those advisory committees abolished by the President, and in the case of advisory committees established by statute, a list of those advisory committees which the President recommends be abolished together with his reasons therefor. The President shall exclude from this report any information which, in his judgment, should be withheld for reasons of national security, and he shall include in such report a statement that such information is excluded.

Responsibilities of Agency Heads

Sec. 8. (a) Each agency head shall establish uniform administrative guidelines and management controls for advisory committees established by that agency, which shall be consistent with directives of the Director under section 7 and section 10. Each agency shall maintain systematic information on the nature, functions, and operations of each advisory committee within its jurisdiction.

(b) The head of each agency which has an advisory committee shall designate an Advisory Committee Management Officer who shall-

(1) exercise control and supervision over the establishment, procedures, and accomplishments of advisory committees established by that agency;

(2) assemble and maintain the reports, records, and other papers of any such committee during its existence; and

(3) carry out, on behalf of that agency, the provisions of section 552 of title 5, United States Code, with respect to such reports, records, and other papers.

Establishment and Purpose of Advisory Committees

Sec. 9. (a) No advisory committee shall be established unless such establishment is-

(1) specifically authorized by statute or by the President; or

(2) determined as a matter of formal record, by the head of the agency involved after consultation with the Director, with timely notice published in the Federal Register, to be in the public interest in connection with the performance of duties imposed on that agency by law.

(b) Unless otherwise specifically provided by statute or Presidential directive, advisory committees shall be utilized solely for advisory functions. Determinations of action to be taken and policy to be expressed with respect to matters upon which an advisory committee reports or makes recommendations shall be made solely by the President or an officer of the federal government.

(c) No advisory committee shall meet or take any action until an advisory committee charter has been filed with-

(1) the Director, in the case of Presidential advisory committees, or

(2) with the head of the agency to whom any advisory committee reports and with the standing committees of the Senate and of the House of Representatives having legislative jurisdiction of such agency. Such charter shall contain the following information:

(A) the committee's official designation;

(B) the committee's objectives and the scope of its activity;

(C) the period of time necessary for the committee to carry out its purpose;

(D) the agency or official to whom the committee reports;

(E) the agency responsible for providing the necessary support for the committee;

(F) a description of the duties for which the committee is responsible, and, if such duties are not solely advisory, a specification of

(G) the estimated annual operating costs in dollars and man-years for such committee;

(H) the estimated number and frequency of committee meetings;

(I) the committee's termination date, if less than two years from the date of the committee's establishment; and

(J) the date the charter is filed. A copy of any such charter shall also be furnished to the Library of Congress.

Advisory Committee Procedures

Sec. 10. (a)(1) Each advisory committee meeting shall be open to the public.

(2) Except when the President determines otherwise for reasons of national security, timely notice of each such meeting shall be published in the Federal Register, and the Director shall prescribe regulations to provide for other types of public notice to insure that all interested persons are notified of such meeting prior thereto.

(3) Interested persons shall be permitted to attend, appear before, or file statements with any advisory committee, subject to such reasonable rules or regulations as the Director may prescribe.

(b) Subject to section 552 of title 5, United States Code, the records, reports, transcripts, minutes, appendixes, working papers, drafts, studies, agenda, or other documents which were made available to or prepared for or by each advisory committee shall be available for public inspection and copying at a single location in the offices of the advisory committee or the agency to which the advisory committee reports until the advisory committee ceases to exist.

(c) Detailed minutes of each meeting of each advisory committee shall be kept and shall contain a record of the persons present, a complete and accurate description of matters discussed and conclusions reached, and copies of all reports received, issued, or approved by the advisory committee. The accuracy of all minutes shall be certified to by the chairman of the advisory committee.

(d) Subsections (a)(1) and (a)(3) of this section shall not apply to any advisory committee meeting where the President, or the head of the agency to which the advisory committee reports, determines that such portion of such meeting may be closed to the public in accordance with subsection (c) of section 552b of Title 5, United States Code. Any such determination shall be in writing and shall contain the reasons for such determination. If such a determination is made, the advisory committee shall issue a report at least annually setting forth a summary of its activities and such related matters as would be informative to the public consistent with the policy of section 552(b) of title 5, United State Code.

(e) There shall be designated an officer or employee of the federal government to chair or attend each meeting of each advisory committee. The officer or employee so designated is authorized, whenever he determines it to be in the public interest, to adjourn any such meeting. No advisory committee shall conduct any meeting in the absence of that officer or employee.

(f) Advisory committees shall not hold any meetings except at the call of, or with the advance approval of, a designated officer or employee of the federal government and in the case of advisory committees (other than Presidential advisory committees), with an agenda approved by such officer or employee.

Fiscal and Administrative Provisions

Sec. 12. (a) Each agency shall keep records as will fully disclose the disposition of any funds which may be at the disposal of its advisory committees and the nature and extent of their activities. The General Services Administration, or such other agency as the President may designate, shall maintain financial records with respect to Presidential advisory committees.

The Comptroller General of the United States, or any of his authorized representatives, shall have access, for the purpose of audit and examination, to any such records.

(b) Each agency shall be responsible for providing support services for each advisory committee established by or reporting to it unless the establishing authority provides otherwise. Where any such advisory committee reports to more than one agency, only one agency shall be responsible for support services at any one time. In the case of Presidential advisory committees, such services may be provided by the General Services Administration.

Termination of Advisory Committees

Sec. 14. (a)(1) Each advisory committee which is in existence on the effective date of this Act shall terminate not later than the expiration of the two-year period following such effective date unless-

(A) in the case of an advisory committee established by the President or an officer of the federal government, such advisory committee is renewed by the President or such officer by appropriate action prior to the expiration of such two-year period; or

(B) in the case of an advisory committee established by an Act of Congress, its duration is otherwise provided for by law.

(2) Each advisory committee established after such effective date shall terminate not later than the expiration of the two-year period beginning on the date of its establishment unless-

(A) in the case of an advisory committee established by the President or an officer of the federal government such advisory committee is renewed by the President or such officer by appropriate action prior to the end of such period; or

(B) in the case of an advisory committee established by an Act of Congress, its duration is otherwise provided for by law.

(b)(1) Upon the renewal of any advisory committee, such advisory committee shall file a charter in accordance with section 9(c).

(2) Any advisory committee established by an Act of Congress shall file a charter in accordance with such section upon the expiration of each successive two-year period following the date of enactment of the Act establishing such advisory committee.

(3) No advisory committee required under this subsection to file a charter shall take any action (other than preparation and filing of such charter) prior to the date on which such charter is filed.

(c) Any advisory committee which is renewed by the President or any officer of the federal government may be continued only for successive two-year periods by appropriate action taken by the President or such officer prior to the date on which such advisory committee would otherwise terminate.

FEDERAL ADVISORY COMMITTEE ACT

1. April 29, Assistant Secretary of Agriculture & Interior Memorandum.
2. March 25, Summary of Judge Jackson's Status Conference.
3. March 21, DC District Court Ruling on NFRC v. Espy.
4. March 21, General Services Administration Memorandum.
5. Federal Advisory Committee Act of 1972.

FOIA GRAP
cc: SUSAN
J. J. S. A.

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

of pages = 2

To: Gray Reynolds	From: Jim Lyons
Date/Agency: ES	Phone #:
Fax #:	Fax #:

NSN 7540-01-317-7388 5089-101 GENERAL SERVICES ADMINISTRATION

April 29, 1994

Memorandum

To: Chief, Forest Service
Acting Director, Bureau of Land Management
Director, Fish and Wildlife Service
Acting Deputy Commissioner, Bureau of Indian Affairs

From: Assistant Secretary of Agriculture, Natural Resources and Environment
Assistant Secretary of the Interior, Land and Minerals Management
Assistant Secretary of the Interior, Indian Affairs

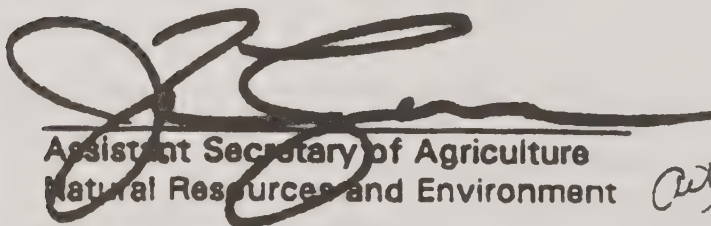
Subject: Federal Advisory Committee Act (FACA) Compliance Concerning
Implementation Activities for the President's Northwest Forest Plan

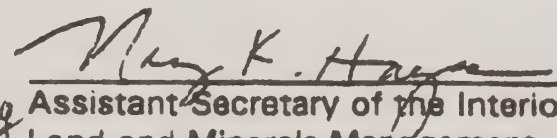
In view of the recent court decision, NRE v. Espy, which determined that the process for preparation of the Forest Ecosystem Management Assessment Team (FEMAT) report for the President's Forest Plan violated the requirements of FACA, special precautions must be exercised to ensure that all current actions and future activities related to implementation of the Forest Plan fully comply with FACA requirements. Consistent with Judge Jackson's decision in the above case, the Record of Decision (ROD) for the Forest Plan issued on April 13, 1994, requires that "all non-federal participation in the forest management process will accord with the strictures of the Act." Failure to comply with FACA during implementation of the Forest Plan potentially places the entire plan at legal risk.


One key implementation objective for ecosystem-based management set forth in the forest plan is to have all involved federal agencies working together as one government. Another is to have full participation of all non-federal governmental interests (the states, tribes, and local governments) in long-term forest management in the region. To achieve these objectives, an interagency approach has been established utilizing committees, working groups, and teams both at the regional and field levels. While input and participation of all involved shareholders, both federal and non-federal, are important to successful implementation of ecosystem-based management, the activities and processes carried out by all components of this new interagency, inter-governmental approach must comply with requirements of FACA.

Full compliance must begin immediately. We realize that this may create special challenges concerning the participation of states and tribes. Attorneys at the Interior Department Solicitor's Office and the Agriculture Department's Office of the General Counsel are available to expedite compliance with this directive. Over the next several weeks, we will be examining options that might enable us to achieve our objectives of partnership and collaboration envisioned in the Forest Plan, while still complying with FACA. However, in the short term, until the FACA issues have been resolved it will be necessary to avoid a consensus-type decision-making or advisory process that involves non-federal officials. It will still be possible to obtain the views of states, tribes, and local governments through individual meetings, open hearings, and written submissions.

To expedite implementation of this directive, copies of this memorandum have been provided directly to the Regional Foresters of the Forest Service (Regions 5 and 6); the State Directors, Bureau of Land Management (Oregon/Washington and California); the Portland Area Director, Bureau of Indian Affairs; the Director of the U.S. Office of Forestry and Economic Development, Portland, Oregon; and the acting Director of the Regional Ecosystem Office.


Assistant Secretary of Agriculture
Natural Resources and Environment


Acting Assistant Secretary of the Interior
Land and Minerals Management


Assistant Secretary of the Interior
Indian Affairs

cc: Administrator, Environmental Protection Agency
Assistant Secretary of the Interior, Fish and Wildlife and Parks
Under Secretary of Commerce for Oceans and Atmosphere
Director, White House Office on Environmental Policy
Regional Director, National Marine Fisheries Service, Seattle, WA
Regional Administrator, Environmental Protection Agency, Seattle, WA
Regional Director, U.S. Fish and Wildlife Service, Portland, OR
USDA, Office of General Counsel, Washington, DC and Portland, OR
USDOl, Office of the Solicitor, Washington, DC
USDOl Regional Solicitor, Portland, OR

Confidential and Attorney-Client Privileged

Summary of Status Conference in
Northwest Forest Resource Council v. Espy
March 25, 1994

The status conference was held in open court, with all parties represented and at least one reporter present. Counsel for the amici parties was present but did not say anything.

Judge Jackson began the status conference by sternly stating that he was dismayed by the government's public reaction to his March 21 decision. [Judge Jackson had apparently read the Washington Post and AP news stories in which, among other things, an unnamed administration official called the decision a "slap on the wrist". The decision had found FEMAT to have violated FACA but did not enjoin the use of the FEMAT Report]. Judge Jackson said the public statements made by the government were not a reaction to be proud of. Judge Jackson said he wanted to emphasize emphatically that his decision was not meant to be commending a good faith effort and was not a "slap on the wrist". Judge Jackson said he wanted to assure himself that the matter was not at an end.

Judge Jackson said that he did not issue an injunction because he did not regard himself to be in a position to instruct the President in what he can or cannot consider in making decisions. Judge Jackson said that the effect of the FEMAT Report in other contexts remains to be determined.

Judge Jackson then stated that he wanted to ask the parties what was likely to happen in the controversy. Plaintiffs answered that other courts were involved in the controversy and that a ROD was expected by April 14. Judge Jackson asked who was expected to sign the ROD, and plaintiffs answered the Secretary of Agriculture and the Secretary of the Interior.

Judge Jackson asked plaintiffs if they intended to challenge the ROD, and if so, would they challenge it in the U.S. District Court for the District of Columbia. Plaintiff's counsel answered that the press had quoted his client as saying that they would challenge the ROD if the preferred alternative were selected, that they would give serious consideration to filing the lawsuit in D.C., and that they would consider such a lawsuit a related case to NFRC v. Espy.

Judge Jackson then turned to the government. The government said that they deeply regretted the comments reported in the newspaper, and that the comments were not cleared and the commentor was not fully informed. Further, the government said that the comments did not reflect the actual views of the government toward the decision.

Judge Jackson asked the government if it would appeal the decision. The government responded that it had not yet decided.

More importantly, Judge Jackson asked the government if had considered forbearing the administrative decision in light of his decision. The government responded that it was under court order in Seattle Audubon Society v. Lyons to issue a ROD by April 14, and that it still intends to do so. The government said the ROD would be signed by the Secretary of Agriculture and the Secretary of the Interior, or their delegates, and would be effective 30 days after it was signed. The government also described in greater detail the three injunctions facing the Forest Service and BLM.

Judge Jackson asked if Judge Dwyer had been informed of his decision. The government responded that it would file a status report before the end of the month and intended to provide a copy of the decision in the status report.

Judge Jackson then said that he accepted the government's contrition of its public comments. Judge Jackson observed that the situation still appeared fluid and that he wanted another status conference.

The government inquired if that meant the court did not intend for its order to be final, and thus not begin the time period for appeal. Judge Jackson responded that he regarded the order as final judgment that an appeal can be take from, but that he hopes that parties do not take the full 60 days to decide whether or not to appeal. Judge Jackson also stated that he intended to maintain jurisdiction over the matter to enforce his order.

Judge Jackson asked plaintiffs to respond. Plaintiffs said that they had nothing else today, but that they may seek some interim relief in the future. Plaintiffs suggested a status conference in mid-May so that enough time had elapsed for them to study the ROD after it is issued. Plaintiffs stated that by mid-May they would have reached some decisions on future actions.

Judge Jackson concluded the hearing by scheduling a status conference for Friday, May 13, at 9:30.

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

NORTHWEST FOREST RESOURCE COUNCIL,)
)
Plaintiff,)
)
v.) Civil Action No. 93-1621
)
ESPY, et al.,) Filed March 21, 1994
)
Defendants.)
_____)

MEMORANDUM AND ORDER

In two recent cases six federal justices and judges have written at length on the problem presented in this case, namely, the implications of the constraints placed by the Federal Advisory Committee Act ("FACA") or "the Act"), 5 U.S.C. App. 2 (1988), on the President's ability to solicit and receive collective advice privately and without formality.¹ Their several opinions developed most of the research and reasoning that underlies this decision as well, and it need not, therefore, be reiterated here. Superficially characterized, however, their scholarship in the

¹In Washington Legal Foundation v. U.S. Dept. of Justice, 691 F. Supp. 483 (D.D.C. 1988), aff'd on other grounds sub nom. Public Citizen v. U.S. Dept. of Justice, 491 U.S. 440 (1989), the Supreme Court held that a privately organized and funded committee of the American Bar Association, was not "utilized," in the sense Congress intended in FACA, by the President in making appointments to the federal judiciary.

In Association of Am. Physicians & Surgeons v. Clinton, 813 F. Supp. 82 (D.D.C.) reversed and remanded, 997 F.2d 898 (D.C. Cir. 1993) ("AAPS"), the D.C. Circuit held that the President's spouse could be deemed a de facto officer or employee of the federal government, thus making FACA inapplicable to a taskforce

aggregate has revealed FACA to be an uncomfortably broad statute, dating from 1972, that would, if literally applied, stifle virtually all non-public consultative communication between policy-making federal officials and a group of any two or more other people, any one of whom is not in government service. As a result, the majority opinions in those cases were at pains to elide the literal reading of FACA to avert what those courts believed were surely legislatively unintended consequences on the one hand, or a major constitutional issue on the other.

This case arises upon yet another attempt by the Executive Branch to escape the toils of FACA in formulating the current Administration's policy for the future of over 24 million acres of federally owned forest lands in the states of Oregon and Washington. The plaintiff Northwest Forest Resource Council ("NFRC") is a not-for-profit association incorporated in Oregon representing the interests of the timber and other forest products industries in the two states. Defendants are the U.S. Secretaries of Agriculture and Interior, a group of individuals comprising the object of this suit, an entity known as the Forest Ecosystem Management Assessment Team ("FEMAT"), and FEMAT's chairman, a research wildlife biologist with the U.S. Forest Service.

Plaintiff alleges that, as convened and employed by the President, FEMAT constituted an "advisory committee" within the contemplation of FACA which, if so, then entitled NFRC (and the public generally) to certain rights to be (or to have been) privy to and to have participated in FEMAT's proceedings. Having been denied those rights while FEMAT was engaged in preparing a

document, published in July, 1993, upon, which the defendant secretaries will, at the President's direction, in major part rely in establishing and implementing a "Forest Plan," NFRC asks this Court to declare FEMAT to have been an "advisory committee" and accord NFRC as many of those rights as possible nunc pro tunc; to declare FEMAT's proceedings null and void for failure to comply with FACA; and to enjoin defendants from any reliance upon FEMAT's report in managing federal forest lands unless and until FEMAT complies with FACA.

Defendants respond that, for various reasons, FEMAT was never conceived, nor did it function, as an "advisory committee" under FACA, and, were this Court to find it so, then FACA itself must be deemed an unconstitutional invasion of the executive privilege for communications necessary to his exercise of the powers entrusted by the Constitution to the President. See United States v. Nixon, 418 U.S. 683, 705 (1974), and Nixon v. Administrator of General Services, 433 U.S. 425, 449 (1977).

This case is presently before the Court on cross-motions for summary judgment.² For the reasons to follow the Court will grant plaintiff's motion for summary judgment in part, deny the

²Also pending in defendants' motion to dismiss the claims made in certain counts of the amended complaint, on the grounds that plaintiff lacks standing to assert those claims and the non-justiciable character of the relief they seek. The Court concludes that NFRC has standing, a fortiori as the plaintiffs had standing in Public Citizen, see 491 U.S. at 448-52, and that the disposition on the merits herein makes it unnecessary to ill

defendants' motion for summary judgment, and grant the relief hereinafter set forth.

I.

The material facts are of record and are not genuinely in dispute. On April 2, 1993, President Clinton, Vice President Gore, and other government officials (including the defendant Secretaries) attended a day-long "forest conference" in Portland, Oregon, to address the long-standing controversy between environmentalists and the forest products industry over the uses to be made of federal forest lands. At the conclusion of the conference the President announced that the Administration planned to "begin work immediately to craft a balanced, a comprehensive, and a long-term policy" toward forest management. Concurrently (or nearly so) with the President's announcement, Katie McGinty, Director of the White House Office of Environmental Policy, in the Executive Office of the President, established an inter-agency group called the Forest Conference Executive Committee ("Executive Committee") to direct and supervise the work of FEMAT, which was then already in the formative stages. Ms. McGinty chaired the Executive Committee. Other active members of the Executive Committee included Thomas Collier, Chief of Staff of the Interior Department, James Lyons, Assistant Secretary of Agriculture for Natural Resources, and five other sub-Cabinet officials. The Executive Committee instructed FEMAT to identify management alternatives, employing an "ecosystem" approach, to attain the "greatest economic and social contribution from the forests." Defendant Jack Ward Thomas, a biologist with the U.S. Forest

Service, was named the leader of FEMAT and reported weekly on FEMAT's progress to the Executive Committee.

FEMAT was composed of six subteams whose participants admittedly included private contractors paid with federal funds. FEMAT also established 14 advisory subgroups to provide it with biological impact assessments on various forms of plant and animal life. Altogether somewhere between 600 and 700 people contributed in some way to FEMAT's work. The subteams and each of the advisory subgroups eventually had benefit of the services of some non-federal personnel, and although the parties are not in agreement as to which of the 600-700 individuals should be counted as "members" of FEMAT for purposes of FACA, in May 1993, the Administration released a list of 37 FEMAT participants who defendants are presently willing to acknowledge must be deemed "members." At least five of those people, defendants also concede, were not regular federal employees. They were Norman Kenneth Johnson, Brian Greber, and George Stankey, full-time faculty members at Oregon State University, and Margaret Shannon and Jerry Franklin, both on the faculty of the University of Washington. None of those professors took leaves of absence from their institutions while working for FEMAT; all continued to receive their full paychecks, and they or their universities were paid varying sums by the federal government.³

³ Defendants estimate the total cost to the government of FEMAT at \$3.1 million, of which approximately \$443,000 (14%) was paid for non-federal contractors' services.

Expenditures were made for office space rental, travel,

On July 1, 1993, President Clinton announced his "Forest Plan for a Sustainable Economy and a Sustainable Environment" ("Forest Plan") which is based in significant part on Option 9, one of the ten forest management "options" presented by FEMAT in its Report. On July 16, 1993, the Forest Service released the FEMAT Report of over 1,000 pages,⁴ and an ensuing "Draft Supplemental Environmental Impact Statement" analyzed only the FEMAT-sanctioned options with Option 9 appearing as the preferred alternative.

The final policy embodied in the Forest Plan is expected by all parties to go into effect on March 31, 1994, pursuant to the order of another district judge. See Seattle Audobon Soc'y v. Moseley, 798 F. Supp. 1484 (W.D. Wash. 1993).

II.

The defendants first argue that FEMAT was simply not an "advisory committee" or not the sort of "advisory committee" with which FACA is concerned. But FACA itself defines an "advisory committee" to which it applies as "any committee, board commission, council, conference, panel, task force, or other similar group, or any subcommittee or subgroup therefore" that is "established or utilized" by the President or an agency " in the

of replacements for federal employees detailed to FEMAT for extended periods.

⁴ The FEMAT Report itself lists 104 names of major contributors to it, 24 of whom were not regular federal employees, although some of the 24 provided only clerical or support services

interest of obtaining advice or recommendations for the President or one or more agencies or officers of the Federal government."

5 U.S.C. App. 2 § 3(2).

By any fair interpretation of the facts and certainly by a literal reading of the statutory definition, FEMAT was an "advisory committee" within the contemplation of FACA in form and function, unless elsewhere excepted in the statute. It was a consultative assembly of knowledgeable persons for a specific purpose; calling it a "team" does not alter its nature. It was both "established" and "utilized" by the President for his guidance in devising a forest management policy. And it did render him "advice" and "recommendations" which he accepted and followed.

Elsewhere in the statute, however, conclaves identical to FEMAT are excluded from the status of being "advisory committees," and exempted from any obligations as such, if, but only if, they are "composed wholly of full-time officers or employees of the Federal Government." 5 U.S.C. App. 2 § 3(a)(iii) (emphasis added). In other words, FACA does not apply if all of the people assembled to advise the President are already in government service.

As the Supreme Court observed in Public Citizen, "FACA was enacted to cure specific ills, above all the wasteful expenditure of public funds for worthless committee meetings and biased proposals." Public Citizen, 491 U.S. at 453. Simply expressed, the counsel of persons who have been "appointed in the civil service," see 5 U.S.C. §§ 2104, 2105, costs the government nothing

more in the way of compensation; their conduct is strictly hedged about by statute and rule to protect against temptation to profit financially from the advice they give; and they ostensibly have no parochial interests to serve apart from the general public good.⁵

In attempting to stretch the language of FACA's exception for committees "composed wholly of full-time officers or employees of the federal government" to reach FEMAT, however, the defendants take the concept of being in federal service to a meaningless extreme. They submit that the five outsiders, the professors who contributed to the work of FEMAT (and the only contributors they will concede to have been "members" of it) should still be regarded as "officers or employees of the federal government" within the meaning of the exception, because, as faculty at state universities, they were "state employees," and as such could have been "assigned," under an unrelated statute, 5 U.S.C. § 3372 (1988), to engage in the performance of a federal function had it occurred to anyone that it might be necessary.

But the presence of state employees on an advisory panel has, notwithstanding 5 U.S.C. § 3372, not saved such panels from FACA in the past. See Center for Auto Safety v. Cox, 580 F.2d 689 (D.C. Cir. 1978). Moreover, none of the five professors were ever

⁵Conversely, as another judge has put it, "[b]ecause committees not composed exclusively of federal officers and employees have members who are not required to foreswear their private associations and insulate themselves against potential conflicts of interest, FACA requires, as an alternative check, that their deliberations be conducted in the open." 228 F.2d 823 at 824-25.

D. "THE ROLE OF LOW IMPACT HERBICIDE TREATMENTS IN ECOSYSTEM
MANAGEMENT" BY McMAHON, MILLER AND THOMAS
1993

Presented at the 1993 National Silviculture Workshop
November 1-4, 1993, Asheville, North Carolina.

THE ROLE OF LOW IMPACT HERBICIDE TREATMENTS IN ECOSYSTEM MANAGEMENT

Charles K. McMahon, James H. Miller, and David F. Thomas

Abstract.--Environmentally safe, selective herbicide treatments can be adapted to manage habitats and direct succession toward desired future conditions within the principles of Ecosystem Management (EM). Six roles for herbicide treatments in EM are suggested: create and maintain desired habitats; create mixed and unevenaged stands; restore damaged landscapes; control exotic, noxious and poisonous plants; maintain recreational areas, trails, and scenic vistas; and manage rights-of-way for multiple use. Low impact, selective herbicide treatments include tree injection, cut-stump sprays or wipes, basal sprays or wipes, directed sprays, and soil-spot sprays. Selective control can also be achieved using broadcast (aerial and ground) applications of selective herbicides. Currently less than 0.1% of National Forest lands are treated with chemical herbicides in a typical year. The six roles and treatment methodologies are consistent with the desire of the current administration to decrease pesticide use, to use safer pesticides, and to emphasize integrated pest management programs.

INTRODUCTION

As the debate on the initial concept of New Perspectives and the current concept of Ecosystem Management for National Forests began a few years ago, some of our public and private sector colleagues would raise the question... **"Will there be a role for herbicides in this new ecological approach to multiple-use management of the National Forests?"** Some would quickly answer their own question and say: **"Probably no role for herbicides"**... because of the widespread disapproval of herbicide use on public lands. Others would say... **"Probably no role for herbicides"**... when new regulatory issues dealing with threatened and endangered species, water quality, State Best Management Practices, etc., are factored into Ecosystem Management strategies. Others would

Project Leader and Research Forester respectively, Southern Forest Experiment Station, USDA Forest Service, Auburn, AL and Pesticide Specialist, Forest Pest Management, USDA Forest Service, Washington, D.C.

say... "Probably no role for herbicides"... because they see herbicides as only benefitting commodity production... "and there would be little room for that"... based on their limited understanding of Ecosystem Management goals. And finally, some environmental organizations would say... "Probably no role for herbicides"... because they pose unnecessary risks to human and ecosystem health and safety, and they are socially unacceptable.

Our own response to the "herbicide question" involved more careful deliberation and was brought to a head by our research mission review process that took place this year within the Southern Station. From that review and from other reviews of Forest Service programs at the regional and national level, it became obvious to us that the Forest Service will need a carefully-devised and publicly-accepted integrated vegetation management program to meet many Ecosystem Management goals. Access to the full menu of vegetation management alternatives... (biological, chemical, manual, mechanical, and prescribed burning) would be required to reach desired future conditions related to the structure, composition and function of ecosystems and their aesthetic acceptance. Moreover, as we sorted fact from fiction, and real needs from rhetoric, we concluded that low impact selective herbicide treatments would often be the most cost-effective, environmentally sound, efficacious, and timely option for meeting many of the multi-resource needs of forest and grassland ecosystems.

Conceptually, we see a continued role for chemical herbicides in Ecosystem Management with a decrease in the amount of active ingredient used per acre in most situations. Keep in mind that many newer herbicide formulations coupled with low impact selective application technology now permit effective treatment with only ounces of active ingredients per acre. Also, keep in mind that less than 0.1% of our National Forest System lands currently receive a herbicide treatment in any one year (USDA 1993a). Positive control, a high degree of selectivity, and cost-effectiveness are what make modern herbicides ideal for meeting many Ecosystem Management needs. Clearly, further research will be required to refine prescriptions for all situations, but useable techniques and approaches could be applied today.

ROLE OF HERBICIDES IN ECOSYSTEM MANAGEMENT

Ecosystem management is the operating philosophy of the Forest Service for stewardship of lands and resources to achieve environmentally sensitive, socially responsive, economically feasible, and scientifically sound multiple-use management of the National Forest System. Ecosystem management means using an ecological approach to achieve the multiple-use management of

National Forests and Grasslands by blending the needs of people and environmental values in such a way that National Forests and Grasslands represent diverse, healthy, productive, and sustainable ecosystems (Bartuska 1993). Conceptual uses of low impact forest herbicides which are consistent with this operating philosophy will be outlined in this paper.

Low impact, selective herbicide treatments include tree injection, cut-stump sprays or wipes, basal sprays or wipes, directed foliar sprays, and soil-spot sprays. These methods are described by Kidd 1987, Miller and Mitchell 1988, and Williamson et al. 1989, except for the innovative wipe techniques that can further minimize application rates. These treatments have the potential to control or suppress the full range of sizes and species of plants when the appropriate individual herbicide or tank mixture is used. Selective control can also be achieved using broadcast applications of selective herbicides with aerial and ground systems. Selectivity can often be enhanced by changing application rate, timing, additives, and herbicide formulation.

These proposed roles are logical extensions of current uses and silvicultural practices that have been reported elsewhere (USDA 1983, 1988, 1989, and 1992; Cantrell 1985) and will not be reviewed in this paper. Our primary focus is on describing roles that enhance non-commodity values, while still supporting wood and forage production. The discussion of these roles and ideas for specific treatments represent research inputs into adaptive management and will warrant experimental and operational monitoring and testing to refine these uses.

1. Create and maintain desired plant and animal habitat

Herbicides in concert with other vegetation management treatments such as prescribed fire can play a vital role in creating and managing habitat for threatened, endangered and sensitive plants and animals. Wildlife and game animal habitat can also be created and maintained with selective herbicide treatments.

- The structure of old growth stands can be mimicked to some degree in younger stands by midstory control, gap formation, and creation of standing and down coarse woody debris for the assemblage of species dependent on older forests.
- In the South, herbicides are being used to selectively remove mid-story and understory hardwoods from older pine stands in order to develop the park-like nesting habitat required by the endangered red cockaded woodpecker. This practice is being used operationally in the USFS Southern Region and has been approved by the U.S. Fish & Wildlife Service.

- Periodic creation of standing and down woody structure through tree injection can also improve stand composition while benefitting a wide array of organisms from bark-foraging birds, raptors and hole-nesters, to arthropods and microorganisms. (McComb and Hurst 1987).
- Food plants for game and non-game wildlife can be encouraged by their release from plant competition using selective herbicide treatments. Food plots created for animal species can be managed by removing woody invaders with single stem herbicide treatments so that costly re-establishment procedures will not be required. Woody browse can be created by basal sprays that deaden tops and yield resprouts. Fruiting shrubs can be released from low-value mid-story and understory components. Woody plant encroachment into traditional grassland habitat of elk and antelope can be suppressed with selective control treatments to perpetuate critical wildlife populations as a supplement to the natural role of fire in these ecosystems. Additionally, on some landscapes forest livestock grazing can be enhanced with increased forage production by controlling species composition to favor more desirable plants.

2. Create mixed and unevenaged stands

Regeneration of a variety of stand types, including both mixed conifer-hardwood, hardwood and unevenaged stands is the challenge facing Forest Service silviculturists, wildlife biologists and other resource managers. Completely new silvicultural systems will have to be developed to meet these challenges, which is underway at several Ecosystem Management research sites across the U.S. Natural regeneration will play an increasing role, which will require innovative vegetation control strategies for establishment and management through succession.

- Through selective removals by herbicides of individual and component plants early in the regeneration phase, successional development can be positively directed, releasing desired conifer and hardwood species, and other desirable components. Wood and fiber outputs can not be overlooked in Ecosystem Management and can be optimally produced using selective application technology. The management of stand structure, composition, and even function (e.g., increasing nitrogen fixers) can be accomplished through removals by selective cutting and selective control with forest herbicides.

- Chemical herbaceous plant control will be needed in lieu of burning treatments in smoke sensitive zones to prepare seed beds for fire subclimax conifer species. Also, unevenaged mixed stands will probably not tolerate periodic burns, thus herbaceous control treatments can be efficiently applied in single-tree gaps or larger openings to foster both conifer and hardwood regeneration.
- Edges between adjoining stands, streamside management zones, and wildlife openings can be blended from early successional (low-stature) species, to shrubs, and to arborescent species by using selective periodic removals. These blended edges of harvest units will create a more favorable aesthetic appearance, provide more habitat options for wildlife and higher recreational values.

3. Restoration and rehabilitation of damaged landscapes

A full array of natural and human induced factors have resulted and will result in extensive areas of damaged landscapes and ecosystems. Pest epidemics, wildfires, hurricanes, ice-snow storms, and widespread drought cause different patterns of perpetual disturbance to forest and range landscapes. Human induced factors such as fire exclusion and over grazing can also contribute to damage and loss. Some past harvesting practices and reforestation efforts also have resulted in undesirable monocultures, and off-site genotypes, some of which may require restoration to natural vegetation.

- Landscape rehabilitation will demand a full array of forest vegetation management tools including herbicides. Broadcast applications of selective herbicides may be required for extensive landscape restorations to accelerate forest canopy development to protect fragile sites, reverse or prevent invasion of exotic species, enhance aesthetics, and reclaim critical habitat.

4. Control of exotic, noxious, and poisonous plants

The Office of Technology Assistance in the U.S. Congress recently published a comprehensive report which describes the current and future threat to the United States from 4,500 harmful non-indigenous plant and animal species (U.S. Congress 1993). The report indicates just 15 potentially high-impact plants, insects and aquatic invertebrates could cause as much as \$134 billion in losses over the next 50 years. This is a growing economic and environmental burden for the entire country, and a major concern on many forest and grassland ecosystems.

There is much discussion and desire to use biocontrol measures to address these concerns. We also see the need for expanding research efforts for the development of biological pesticides and biocontrol programs for exotic plant species. However, these methods are generally not available at this time and will require years to develop and at very high costs. The need to suppress or eradicate non-indigenous species in some areas calls for immediate action with tools that are readily available. Selective chemical herbicide treatments are often the only effective means to meet this urgent national need.

- Forest Service strategic plans for both landscape restoration and management of introduced forest pests have been recently presented in "Healthy Forests for America's Future---a Strategic Plan" (USDA 1993b) and the "Strategic Plan for Pesticide Use, Management and Coordination" (to be published in 1994). While the primary focus in these plans is on insect pests, plant pests are noted as serious problems on most National Forests. Because of the unrelenting aggression of these exotic plants with no endemic predators, herbicides must be a part of any cost-effective integrated pest management approach. In most cases there is no substitute for herbicide's positive control of these persistent and spreading pests. Some of the most pervasive imports are purple loosestrife, knapweeds, salt cedar, and kudzu---each dominate millions of acres. Exotic pests, besides detracting from forest development and recreational uses, often represent severe threats to native plant and wildlife diversity in critical habitats.
- Poisonous plants represent continued threats to human and animal health. Poison ivy and oak in campgrounds and recreation sites place severe restriction on recreational opportunities for sensitive individuals. Poisonous plant control has been a long-term activity on National Grasslands to prevent livestock mortality and these integrated pest management programs will require herbicides to play a continuing role.

5. Maintain recreation areas, trails, and scenic vistas

Woody regrowth that hinders recreational activities or impairs vistas in high-use sites can be controlled with herbicide treatments that minimize unsightly brownout and yield long-term control. Slow-acting herbicides and selective application techniques can be used in this role. Maintenance on the expanding Forest Service trail system, which already exceeds 120,000 miles will demand low-cost innovative treatments.

- Resprouting woody species immediately adjacent to trails are typically manually cut each and every year. They could be selectively treated once after cutting with a very small amount of herbicide, eliminating the need for successive treatments. The cost savings would be dramatic and the environmental impacts negligible.
- Creation and maintenance of vistas can greatly enhance the recreational value of mountainous areas. Vistas can be effectively managed through the periodic control of the tall-growing woody component by treating cut stumps with herbicides or by using selective, non-brownout herbicide treatments. This results in the promotion of low-growing, protective, and/or flowering communities. This will protect the site and prolong the periods between treatments compared to the common frequent recutting of woody resprouters. Vista openings can also present new opportunities for creating and maintaining habitat for songbirds and small mammals.
- The beauty of highly visible forest stands and trails can be enhanced by encouraging flowering and fruiting plants through selective removals of competitors by low-impact herbicide treatments. Continued cutting would only result in continued resprouting in most cases.

6. Multi-use management of rights-of-way

The 369,000 miles in the Forest Service road system, with 6,000 miles of scenic byways, demands roadside management for safety and aesthetic values. There is growing recognition that rights-of-way (ROW) which were initially created to protect roads, power lines, and pipelines must be managed for more than the inanimate "road-bed, wire, and pipe." ROW management strategies are developing that incorporate enhancement of "woodlands, wildlife, and people" values.

- Natural flowering plants and wildflowers can be encouraged with selective herbicides and selective applications to improve the aesthetic appearance and biological diversity of ROW's. Some herbicide-treated ROW's can be used as refuge areas for threatened and endangered species, which are dependent on disturbance.

- The vegetation corridors resulting from power transmission, telephone, and pipeline ROW's can be managed as multiple-use habitat (Bramble and Byrnes 1983, Bramble et al. 1985, 1992a and b). Tall woody plants are undesirable under wire corridors and deep woody roots can penetrate pipes on pipeline corridors. Low growing perennials for wildlife and/or aesthetic value can be encouraged and maintained through selective control of unwanted woody invaders. Parallel to this low profile vegetation can be a zone of shrub species, again perpetuated by hardwood control. A parallel zone of mid-story tree species (if present in the ecosystem) can then be blended into the adjacent stands. The architecture and shape of these corridor tiers would be customized to blend with the adjacent stand management objectives. Also, ROW's will be increasingly used for recreational access by hikers, bikers, and off-roaders. Their needs can be evaluated, and where possible, incorporated into ROW vegetation management strategies.

These same principles of "edge management" with rights-of-way can be employed across the landscape. The extensive edges that separate stands or within-stand management zones, can be blended and smoothed to increase habitat and aesthetics, by creating size gradients in woody plants through selective control.

FORESTRY HERBICIDES ARE ENVIRONMENTALLY SAFE

Chemicals used in modern forestry herbicide formulations are "safe" when used properly. They have negligible risks to the environment and human health when used in accordance with label directions and applied by qualified applicators. There are several factors associated with herbicide properties, modern application technology, forest use patterns and risk assessments that support this conclusion (USDA 1988, 1989, 1992).

Chemical herbicides are among the most vigorously tested consumer products on the market today. Herbicides must meet strict standards of environmental safety and human health protection before they are registered for use. Very few products make it through the more than 100 safety related studies required by the Environmental Protection Agency.

- Modern forestry herbicides have relatively low toxicity as compared to older herbicides and other pesticides such as insecticides and fungicides. As measured by the lethal dose criteria, most of the active ingredients in forestry herbicide formulations have toxicity levels below household chemicals, food additives, and non-prescription drugs. Table 1 shows toxicity categories for pesticides and Table 2 compares the toxicity of forestry herbicides with some household chemicals.

- Unlike insecticides, the newer forestry herbicides act on biochemical processes such as photosynthesis, amino acid pathways and growth regulators that are unique to plants and do not occur in animals. This is why wildlife species are not directly affected by these chemicals (McComb and Hurst 1987, Miller and Witt 1991). However, wildlife may be influenced by the habitat shifts that can occur with broadcast herbicide treatments or from other vegetation management activities. The use of selective herbicide treatments should help to minimize habitat impacts.
- Modern forestry herbicides have low bioconcentration factors and therefore do not bioaccumulate when ingested by humans or wildlife. Unlike many older chemical pesticides that built up in fatty tissue, modern herbicides are water soluble and quickly excreted by animals. According to Isensee (1991), "most existing herbicides as well as many of the newer insecticides, have relatively short half-lives and possess properties that are indicative of low bioconcentration factors."
- Most forestry herbicides in use today biodegrade relatively quickly. They do their job on the target species and then break down from exposure to sunlight, soil micro-organisms and plant enzymes. The few herbicides that are persistent in the soil, such as picloram and tebuthiuron, can be used effectively in prescriptions that require residual control of reinvading target species.
- Biologically significant amounts of forest herbicides are unlikely to reach ground water by runoff or by leaching through the soil. Herbicide degradation by hydrolysis, microbial decay, photodecomposition and plant metabolism limits off-site movement. Another major factor which limits the amount of herbicide available for off-site transport is the infrequent use pattern of forestry herbicides. Even in agricultural systems, runoff of pesticides from treated areas to aquatic sites is limited to 3 to 5% of the amount applied under "worst case" situations, e.g. high intensity rainfall shortly after application (Isensee 1991). On occasions, trace amounts of forestry herbicides have been found in surface water on or near a site in brief pulses during and following the first three storm events after application (Michael and Neary 1993). As might be expected, this will occur more often from broadcast applications as compared to selective single stem, cut surface, or soil spot applications. Typically, the concentrations of herbicides found are well below known toxicity levels and EPA's drinking water standards and health advisories.

plantations annually with herbicides (Alabama Cooperative Extension Service 1993).

There have been numerous herbicide and vegetation management environmental impact statements and risk assessments conducted in recent years (USDA 1988, USDA 1989, USDA 1992). However, it is obvious we need to do a better job of communicating the use patterns and risk findings to the forestry sector and the general public. We also need to inform and educate Forest Service line officers of the relative risks associated with all tools available for implementing Ecosystem Management strategies. This open communication will be needed if we expect to build partnerships and reach informed consent (and/or support) for the continued role of herbicides in Ecosystem Management. Central to this task will be the following: a clearer explanation of the overall role of vegetation management strategies in Ecosystem Management; why we sometimes use herbicides in lieu of alternatives; the multi-resource benefits to be derived over the long run; the frequency and patterns of use on an ecosystem or landscape basis; and a clear explanation of potential risks to human health and environmental safety.

CONCLUDING REMARKS

Since the current administration took office in January 1993, and with the release of the National Academy of Science study "Pesticides in the Diets of Infants and Children" (Landrigan, P.J., et al. 1993), the emphasis on pesticide safety has increased dramatically. The administration has proposed significant reform for pesticide safety by endorsing reduced pesticide use and the use of "safer" pesticides. This reform is strongly endorsed by EPA, USDA and the Food and Drug Administration. Legislation will be introduced in 1994 to modify the Federal Insecticide, Fungicide and Rodenticide Act which supports "safer" pesticides, and for the introduction of integrated pest management strategies on all agricultural lands.

Consistent with this national trend of "safer" pesticide use, selective herbicide applications can be tailored to direct vegetation succession and manage habitat to support the principles of Ecosystem Management. Soil productivity can be safeguarded and fertility improved through low-impact removals of selected components and the encouragement of soil-forming leguminous species. Creation of coarse woody debris and snags can enrich species diversity on upland and riparian habitats. Recreational values on Forest Service lands can be greatly improved and efficiently maintained with judicious herbicide use. The selective removal of individual plants through quick and simple applications of modern forestry herbicides represents a

sophisticated and safe management tool for ecosystem scale management.

Forestry herbicides offer selectivity through both directed applications and the inherent selective nature of all modern herbicides where some undesirable plants are controlled, others are suppressed, and the desirable plants are released. Herbicide applications can and should be used as part of an integrated vegetation management approach employing other treatments such as manual cutting and prescribed fire to reach multi-resource Ecosystem Management objectives. This wise-use, low-impact approach will require a well-trained cadre of knowledgeable applicators under competent supervision and contract monitoring.

The six roles briefly outlined in this paper are not necessarily a complete list of all possible roles for herbicides in Ecosystem Management. However, they serve to illustrate how this readily available silvicultural tool can be used for more than just economically driven objectives. Moreover, describing the use of selective herbicide treatments for the protection of non-commodity values may help overcome some of the myths and misperceptions that have long surrounded the use of herbicides in forestry.

The traditional role of forestry herbicides to enhance commodity outputs will continue on many landscapes in the United States, especially in areas of mixed public and private ownerships and in the East where most of the forest lands are in the private sector. In many areas of the United States, herbicide use in the private sector has not been as regulated or constrained as in the public sector. Balancing natural resource values associated with Ecosystem Management with traditional national values (i.e., private property rights), will require building new partnerships and new lines of communication between the public and private sectors. In order to maintain a viable working partnership with the private forestry sector, it would appear essential that natural resource agencies retain chemical herbicides in their vegetation management programs. In that way, the forestry community and the general public will not receive "mixed signals" about what are safe and acceptable Ecosystem Management practices.

LITERATURE CITED

Alabama Cooperative Extension Service. 1993. Alabama Nonindustrial Private Forest owners - Snapshots from a family album. Circular ANR-788, Auburn University, AL. 19 p.

Bartuska, A.M. 1993. Ecosystem Management. USDA Forest Service, Ecosystem Management Internal Memo, January 12, 1993. 2 p.

Bramble, W.C. and W.R. Byrnes. 1983. Thirty years of research on development of plant cover on an electric transmission right-of-way. *Journal of Arboriculture* 9:6-13.

Bramble, W.C., W.R. Byrnes and R.J. Hutnik. 1985. Effects of a special technique for right-of-way maintenance for deer habitat. *Journal of Arboriculture* 11:278-284.

Bramble, W.C., R.H. Yahner, and W.R. Byrnes. 1992a. Breeding-bird population changes following right-of-way maintenance treatments. *Journal of Arboriculture* 18:23-32.

Bramble, W.C., R.H. Yahner, W.R. Byrnes, and S.A. Liscinsky. 1992b. Small mammals in plant cover types on an electric transmission right-of-way. *Journal of Arboriculture* 18:316-321.

Cantrell, R.L. et. al. 1985. A guide to silvicultural herbicide use in the southern United States. Auburn Univ. School of Forestry, Alabama Agricultural Experiment Station, 517 p.

Isensee, A.R. 1991. Bioaccumulation and food chain accumulation. Chapter 5, p. 187-199, In: *Environmental Chemistry of Herbicides* Vol. II, Grover R. and A.J. Cessna eds. CRC Press, Boca Raton, FL. 302 p.

Kidd, F.A. 1987. Application and use of herbicides in forest and industrial right-of-way sites. p. 297-312 In: *Methods of applying herbicides*, monograph series, Weed Sci. Soc., No. 4. 358 p.

Landrigan, P.J., et al. 1993. Pesticides in the diets of infants and children. National Academy Press, 386 p.

McComb, W.C. and G.A. Hurst. 1987. Herbicides and wildlife in the southern forests. pp. 28-39. In: Dickson, J. G. and O.E. Maughan, (eds.); *Managing Southern Forests for Wildlife and Fish -- A Proceedings*; October 8, 1986; Birmingham, AL. Gen. Tech. Rep. SO-65. New Orleans, LA; USDA Forest Service, Southern Forest Experiment Station.

Michael, J.L. and D.G. Neary. 1993. Herbicide dissipation studies in southern forest ecosystem. *Environmental Toxicology and Chemistry* 12(1993):405-410.

Miller, K.V. and J.S. Witt. 1991. Impacts of forestry herbicides on wildlife. pp. 795-800 (Vol 2). In: Coleman, S.S. and D.G. Neary (eds.); *Proceedings of Sixth Biennial Southern Silv. Res. Conf.*; October 30-November 1, 1990; Memphis, TN. Gen. Tech. Rep. SE-70 Asheville, NC; USDA Forest Service, Southeastern Forest Experiment Station.

Miller, J.H. and R.J. Mitchell (eds). 1988. A manual on ground applications of forestry herbicides. USDA Forest Service Manage. Bull. R8-MB-21, 316 p.

Pimentel, D. and Levitan, L. 1986. Pesticides: Amounts applied and amounts reaching pests. BioScience vol. 36 No.2 (1986):86-91.

USDA. 1983. Forest Management Chemicals. Agricultural Handbook 585. USDA Forest Service, Forest Pest Management. Washington, D.C. Revised May 1983, 645 p.

USDA. 1988. Managing competing and unwanted vegetation. Final Environmental Impact Statement. USDA Forest Service, Pacific Northwest Region, November 1988.

USDA. 1989. Vegetation management in the coastal plain/piedmont. Final Environmental Impact Statement. Vol. II Management Bulletin, R8-MB-23. USDA Forest Service, Southern Region. January 1989.

USDA. 1992. Risk assessment for herbicide use in Forest Service Regions 1,2,3,4, and 10 and on Bonneville Power Administration Sites. USDA Forest Service contract 53-3187-9-30. Prepared by Labat-Anderson Incorp., Arlington, VA. May 1992.

USDA. 1993a. Report of the Forest Service Fiscal Year 1992. U.S. Dept. of Agriculture, Forest Service, Washington, D.C. 214 p.

USDA. 1993b. Healthy forest for America's future---a strategic plan. USDA For. Serv. Manage. Plan, MP-1513, 58 p.

U.S. Congress. 1993. Harmful non-indigenous species in the United States. U.S. Congress Office of Technology Assistance. OTA-F-566, September 1993, 390 p.

Williamson, M., J.H. Miller and P.A. Mistretta. 1989. Hand application methods for commonly used forestry herbicides in the South. USDA Forest Service Training Manual, Atlanta, GA. 14 p.

Table 1. Toxicity categories for pesticides

Toxicity category	Signal word	Acute oral LD ₅₀ person (mg/kg) <50	Acute dermal LD ₅₀ (mg/kg) <200	Acute inhalation LD ₅₀ (mg/kg) <0.2	Eye effects	Skin effects	Estimated amount needed (orally) to kill the average person
I	DANGER				Corrosive; corneal opacity not reversible within 7 days	Corrosive	A taste (<7 drops) to a teaspoonful
II	WARNING	50-500	200-2,000	0.2-2.0	Corneal opacity reversible within 7 days; irritation persisting for 7 days	Severe irritation at 72 hours	A teaspoonful to an ounce
III	CAUTION	500-5,000	2,000-20,000	2.0-20	No corneal opacity; irritation reversible within 7 days	Moderate irritation at 72 hours	An ounce to a pint
IV	CAUTION	>5,000	>20,000	>20	No irritation	Mild or slight irritation at 72 hours	Greater than a pint

> = Greater than.

< = Less than.

Table 2. Toxicities of forest herbicides and other products for comparison. Small amounts for acute oral LD₅₀'s indicate a higher toxicity.

Trade name	Approximate acute oral LD ₅₀ ^a (mg/kg)	Toxicity category	Signal word
OTHER PRODUCTS FOR COMPARISON			
Gasoline -	150	II	--
Caffeine	200	II	--
Aspirin	1,240	III	--
Baking soda	3,500	III	--
Table salt	3,000	III	--
<u>Herbicides</u>			
AAtrex 4L	1,886	III	CAUTION
AAtrex Nine-O	1,600	III	CAUTION
Accord	5,400	IV	CAUTION
Acme Brush Killer	2,010	III	CAUTION
Arsenal AC	>5,000	IV	CAUTION
Banvel CST	>5,000	IV	CAUTION
Banvel 720	1,707	III	CAUTION
Banvel	2,629	III	CAUTION
Chopper RTU	>5,000	III	CAUTION
Escort	>5,000	III	CAUTION
Garlon 4	2,460	III	CAUTION
Garlon 3A	2,830	III	DANGER ^b
Krenite	24,000	IV	CAUTION
Krenite S	>5,000	IV	WARNING ^b
Oust	>5,000	IV	CAUTION
Pathway	8,000	IV	WARNING ^b
Pronone 10G	>5,000	IV	CAUTION
Tordon K	5,000-6,000	IV	CAUTION
Tordon 101 Mixture	3,000	III	CAUTION
Velpar L	7,080	IV	DANGER ^b
Weedone CB	2,140	III	WARNING ^b
Weedone 170	2,000	III	CAUTION
Weedone 2,4-DP	2,200	III	CAUTION

^aUnless otherwise indicated, values are for the formulated product (as in the container before any additional mixing).

^bSevere eye irritant, which increases the severity of the signal word.

> = Greater than.

E. FY 1993 ANNUAL PESTICIDE-USE REPORT

Table 15—Pesticide use report—fiscal year 1993

Common name	Target pest or purpose	Treatment Unit	Units treated	Quantity used
				Pounds 1/ 2/
Fungicides and fumigants:				
Basamid	Fungi	Acres	5.1	2,149.0
	Fusarium	Acres	23.7	8,217.0
Bayleton	Fusiform rust	Acres	1,194.0	.6
Benlate	Botrytis	Acres	24.0	.1
	Fungi	Acres	39.0	3.1
	Fungi	Square Feet	5,000.0	1.0
	Fungi	Trees	4,675,000.0	.1
	Nursery blight	Acres	38.8	19.4
Benomyl	Botrytis	Acres	15.4	36.5
	Fungi	Acres	27.8	14.3
	Fusarium	Acres	25.6	3.8
Borax	Annosus control	Acres	35,056.0	14,630.3
	Fungi	Acres	7,741.0	4,145.5
Bravo	Nursery blight	Acres	12.5	18.0
	Tomato blight	Acres	24.0	.1
Captan	Botrytis	Acres	25.0	.7
	Fusarium	Acres	4.8	2.4
Chlorothalonil	Botrytis	Acres	12.8	19.2
	Dothistromapini	Acres	7.0	13.9
	Fungi	Acres	120.4	238.8
	Other diseases	Acres	11.0	1.5
Dazomet	Soil pathogens	Acres	57.9	20,586.5
DCNA	Botrytis	Acres	3.0	3.3
	Botrytis	Greenhouses	15.0	33.4
	Fungi	Acres	22.6	22.6
DCPA	Plants	Acres	48.5	582.0
Dodine	Fungi	Acres	.1	.1
Dowfume	Fungi	Acres	9.2	2,677.0
Etridiazole	Phytophthora	Acres	1.0	.1
MC33	Fungi	Acres	30.0	393.3
Metalaxyl	Fungi	Acres	3.5	8.4
	Phytophthora	Acres	1.0	.2
	Whitebark root disease	Acres	1,000.0	.1
Methyl bromide/ Chloropicrin	Fungi	Acres	30.7	10,861.0
	Soil fumigant	Square feet	5,100.0	51.0
	Soil pathogens	Acres	71.1	24,829.7
Syllit	Fungi	Acres	7.3	9.5
Thiram	Damping-off	Acres	421.0	1.2
Triadimefon	Keithia blight control	Acres	4.0	1.0
	Siroccocus control	Acres	5.0	1.3
	White pine blister rust	Acres	29.0	1.4
Triazole	Fungi	Acres	.4	1.6
Vinclozolin	Botrytis	Acres	1.0	.9
Total 1993 fungicides and fumigants		Acres	46,154.1	
		Greenhouses	15.0	
		Square feet	10,100.0	
		Trees	4,675,000.0	
Total Pounds				89,580.6

See footnotes at end of table.

Table 15—Pesticide use report—fiscal year 1993—Continued

Common name	Target pest or purpose	Treatment Unit	Units treated	Quantity used
				Pounds 1/ 2/
Herbicides, algicides, and plant growth regulators:				
Accord	Conifer release	Acres	53.0	.2
	General weeds	Acres	322.0	7.5
	Noxious weeds	Acres	39.0	5.3
	Shrubs	Acres	253.0	4.5
Arsenal	Site preparation	Acres	1,056.0	2.4
	Conifer release	Acres	7,029.0	1.8
	Hardwood release	Acres	677.0	.2
	Site preparation	Acres	4,599.0	1.1
Arsenal/Oust	Wildlife habitat improvement	Acres	753.0	.9
Balan	Conifer release	Acres	15.0	6.0
Banvel	General weeds	Acres	1.0	1.5
Banvel/Tordon	Noxious weeds	Acres	143.5	209.7
	Rights-of-way	Acres	176.0	220.0
	Noxious weeds	Acres	4.0	12.0
	Plants	Acres	17.8	53.4
Bifenox	General weeds	Acres	2.0	1.3
Bordeaux	Rights-of-way	Acres	195.6	32.0
Bromacil	Noxious weeds	Acres	12.0	0.6
Chlosulfuron	Noxious weeds	Acres	251.5	15.9
Clopyralid	Noxious weeds	Acres	9.0	.8
Curtail	Noxious weeds	Acres	2.0	12.0
Cutrine	Algae control	Acres	3.8	36.0
Dacthal 3/	General weeds	Acres	291.0	9.5
Dicamba	Nursery blight	Acres	576.5	301.0
	Noxious weeds	Acres	8.3	7.4
	Plants	Acres	142.0	188.0
	Noxious weeds	Acres	2.0	5.0
Dicamba/Clopyralid	Aquatic weeds	Acres	2.0	18.0
Diquat	Range management	Acres	23,242.0	20,344.0
Diuron	Conifer release	Acres	697.0	1.9
Triclopyr	General weeds	Acres	322.0	.1
	Grape vine control	Acres	2,564.0	8.0
	Hardwood release	Acres	508.0	1,640.3
	Noxious weeds	Acres	39.0	4.1
	Range management	Acres	258.0	15.2
	Shrubs	Acres	20,556.0	18,911.0
	Site preparation	Acres	8,818.0	8,112.0
	Wildlife habitat improvement	Acres	6,012.3	7,344.3
	Conifer release	Acres	697.6	433.3
	General weeds	Acres	676.0	223.0
	Grass	Acres	192.0	576.0
	Hardwood release	Acres	142.5	285.0
	Release	Acres	1,266.6	992.6
	Noxious weeds	Acres	66.1	369.2
Plants	Acres	13.0	26.0	
Range management	Acres	102.7	10.0	
Shrubs	Acres	1,351.0	679.7	
Site preparation	Acres	5.0	13.3	
Glyphosate	Wildlife habitat improvement	Acres		

See footnotes at end of table.

Table 17--Pesticide use report--fiscal year 1993--Continued

Common name	Target pest or purpose	Treatment Unit	Units treated	Quantity used
				Pounds 1/ 2/
Herbicides, algicides, and plant growth regulators: (Continued)				
Glyphosate/Triclopyr	Conifer release	Acres	1,605.0	1,548.5
Goal	General weeds	Acres	39.0	1.6
	Nursery blight	Acres	1.5	.3
Hexazinone	Conifer release	Acres	6,394.1	13,164.7
	General weeds	Acres	5.0	10.0
	Grass	Acres	76.0	26.7
	Shrubs	Acres	320.0	560.0
Krenite	General weeds	Acres	7.0	5.7
	Hardwood release	Acres	323.0	13.2
Metsulfuron	Noxious weeds	Acres	100.0	40.0
Napropamide	General weeds	Acres	34.3	51.5
Oryzalin	Range management	Acres	3.0	8.0
Oust	Conifer release	Acres	3,164.0	.2
	General weeds	Acres	7.0	.2
	Shrubs	Acres	60.0	.8
	Site preparation	Acres	15.0	.1
Oxyfluorfen	General weeds	Acres	94.0	18.4
	Plants	Acres	24.1	9.9
	Range management	Acres	1.0	3.0
Pathfinder	Shrubs	Acres	10.0	1.9
Pathway	Noxious weeds	Acres	360.0	37.5
Picloram	General weeds	Acres	50.5	66.0
	Noxious weeds	Acres	9,056.5	3,941.9
	Pinon/Juniper control	Acres	2.4	2.4
Poast	General weeds	Acres	21.0	.2
Pronone	Conifer release	Acres	3,495.0	5.2
	General weeds	Acres	7.0	.3
	Noxious weeds	Acres	10.0	1.0
	Site preparation	Acres	4,666.0	13.6
	Wildlife habitat improvement	Acres	20.0	.2
Rodeo	General weeds	Acres	6.0	.7
	Noxious weeds	Acres	273.0	64.7
	Shrubs	Acres	50.0	1.6
	Site preparation	Acres	1.0	2.0
Seven	General weeds	Acres	6.5	5.9
Simazine	Noxious weeds	Greenhouses	15.0	2.0
	Range management	Acres	2.0	24.0
Tebuthiuron	General weeds	Acres	100.0	40.4
Tordon	Noxious weeds	Trees	745.4	370.8
	Rights-of-way	Acres	33.0	59.0
Tordon/weed-out	Noxious weeds	Acres	59.2	20.2
Transline	Noxious weeds	Acres	68.0	1.1
Velpar/Oust	Conifer release	Acres	1.0	.5

See footnotes at end of table.

Table 15—Pesticide use report—fiscal year 1993—Continued

Common name	Target pest or purpose	Treatment Unit	Units treated	Quantity used
				Pounds 1/ 2/
Herbicides, algicides, and plant growth regulators: (Continued)				
2,4-D	General weeds	Acres	560.3	899.0
	Noxious weeds	Acres	2,830.8	3,620.8
	Range management	Acres	200.0	400.0
	Rights-of-way	Acres	176.0	88.0
2,4-D/Banvel	General weeds	Acres	100.0	250.0
	Noxious weeds	Acres	404.8	143.5
2,4-D/Banvel/Tordon	Noxious weeds	Acres	1.0	4.2
2,4-D/Clpyralid	Noxious weeds	Acres	233.0	194.1
2,4-D/Curtail	Noxious weeds	Acres	183.0	2.4
2,4-D/Dicamba	General weeds	Acres	135.0	250.0
	Noxious weeds	Acres	3,849.0	8,205.6
2,4-D/Dicamba/Picloram	Noxious weeds	Acres	337.0	413.0
2,4-D/Glyphosate	Noxious weeds	Acres	197.0	220.6
2,4-D/Picloram	Noxious weeds	Acres	7,155.1	7,036.9
2,4-D/Picloram/Clpyralid	Noxious weeds	Acres	.5	6.8
	Noxious weeds	Acres	2,560.5	1,676.8
Total 1993 herbicides, algicides, and plant growth regulators		Acres	143,892.2	
		Greenhouses	15.0	
		Trees	1,138.0	
			Total Pounds	105,295.3

See footnotes at end of table.

Table 15—Pesticide use report—fiscal year 1993—Continued

Common name	Target pest or purpose	Treatment Unit	Units	Quantity				
			treated	used	Pounds	1/	2/	
Insecticides, acaricides, and pheromones:								
Acephate	Aphids	Greenhouses	1.0					
	Aphids	Square feet	3,196.0					.5
	Cutworms	Acres	.0					.1
	Western spruce budworm	Acres	20.0					.0
	Western spruce budworm	Trees	798.0					.2
Amdro	Ants	Acres	245.0					19.9
Asana	Miscellaneous insects	Trees	64.0					48.4
	Wood borer	Acres	20.0					1.3
Bendiocarb	Fleas	Acres	816.0					.1
Benzene acetate	Miscellaneous insects	Trees	43.0					10.8
Bt 4/	Gypsy moth	Acres	8,160.0					.1
	Miscellaneous insects	Acres	24.0				195,840.0	BIU
Carbaryl	Mosquitoes	Acres	160.0				768.0	BIU
	Aphids	Acres	1.0				1,225.0	BIU
	Aphids	Greenhouses	1.0					.6
	Bark beetles	Acres	2.0					.6
	Bark beetles	Tree groups	11.0					50.0
	Miscellaneous insects	Trees	664.0					33.8
	Mites	Square feet	1,000.0					152.0
	Mountain pine beetle	Acres	10,238.0					.1
	Mountain pine beetle	Trees	1,138.0				1,231.0	
	Pine tip moth	Acres	3.5					38.0
	Miscellaneous insects	Acres	27.1					7.0
	Termites	Buildings	1.0					26.0
	Coumaphos	Miscellaneous insects	Head cattle	3,800.0				1.3
	Cyfluthrin	Mites	Head cattle	12,000.0				160.0
	DDVP	Miscellaneous insects	Trees	64.0				22.5
Diazinon	Cone beetles	Pheromone traps	40.0					.5
	Fleas	Acres	155.0					.1
Dienochlor	Miscellaneous insects	Acres	52.0					22.4
	Nursery pests	Acres	18.0					24.4
	Mites	Greenhouses	1.0					.3
Dimethoate	Mites	Square feet	808.0					.1
	Tip moths	Acres	17.3					.3
Dimlin	Gypsy moth	Acres	688.0					8.7
Dipel	Gypsy moth	Acres	6,130.0					.1
Disrupt	Gypsy moth	Acres	2,248.0				24.0	BIU
Dursban	Bark beetles	Acres	839.0					.3
	Bark beetles	Trees	1,576.0					.1
Esfenvalerate	Cone beetles	Trees	3.0					.1
	Cone and seed insects	Trees	3,728.0					.1
Fenbutatin-oxide	Mites	Greenhouses	1.0					1.5
	Mites	Square feet	1,060.0					.1
Furadan	Tip moths	Trees	500.0					.0
Gypchek	Prevent defoliation	Acres	3,760.0					.0
Lindane	Miscellaneous insects	Grafts	400.0				117.9	
	Southern pine beetle	Acres	56.0					.4
	Southern pine beetle	Trees	2,794.00					3.7

See footnotes at end of table.

Table 15—Pesticide use report—fiscal year 1993—Continued

Common name	Target pest or purpose	Treatment Unit	Units treated	Quantity used	
				Pounds	1/
Insecticides, acaricides, and pheromones: (Continued)					
Malathion	Aphids	Acres	1.0		.1
	Conifer release	Trees	20.0		.1
Mavnk	Greenhouse insects	Square feet	29,000.0		.1
MCH	Douglas-fir beetle	Acres	24.0		1.3
	Miscellaneous insects	Acres	120.0		12.4
Orthene	Cone and seed insects	Acres	44.0		6.0
Permethrin	Miscellaneous insects	Acres	17.0		2.9
Potassium	Aphids	Acres	1.0		22.8
	Aphids	Greenhouses	1.0		1.0
Pydrin	Cone and seed insects	Trees	450.0		.1
Verbenone	Miscellaneous insects	Acres	280.0		12.5
	Mountain pine beetle	Acres	10.0		.8
Zinc phosphide	Miscellaneous insects	Acres	3.0		.1
Total 1993 insecticides, acaricides, and pheromomes		Acres	34,180.0		
		Buildings	1.0		
		Grafts	400.0		
		Greenhouses	5.0		
		Head of cattle	15,800.0		
		Pheromone traps	40.0		
		Square feet	35,064.0		
		Tree groups	11.0		
		Trees	11,842.0		
			Total Pounds	2,046.0	

See footnotes at end of table.

Table 15—Pesticide use report—fiscal year 1993—Continued

Common name	Target pest or purpose	Treatment Unit	Units treated	Quantity used
				Pounds 1/ 2/
Predacides, piscicides, and repellants:				
Fish tox	Fish	Stream miles	8.8	10.0
Gustafson	Mice	Acres	4,550.0	.0
Noxfish	Fish	Stream miles	8.8	10.0
	Undesirable fish	Acres	30.0	.2
B.G.R.	Deer	Acres	6,894.0	454.4
Rotenone	Fish	Stream miles	8.0	.4
	Other diseases	Acre feet	11.0	1.5
	Other diseases	Stream miles	19.0	59.2
Thiram	Deer	Acres	6.0	10.2
Total 1993 predacides, piscicides and repellants		Acres	11.0	
		Acres	11,480.0	
		Stream miles	44.5	
Total Pounds				546.0

See footnotes at end of table.

Table 15—Pesticide use report—fiscal year 1993—Continued

Common name	Target pest or purpose	Treatment Unit	Units treated	Quantity used	
				Pounds	1/
Rodenticides:					
Chlorophacinone	Ground squirrel	Acres	30.0		.2
Diphacinone	Ground squirrel	Acres	230.0		2.8
Strychnine	Prairie dogs	Acres	127.0		.0
	Other predators	Acres	369.0		.3
Zinc phosphide	Gophers	Acres	57,434.6	240.8	
	Prairie	Acres	4,568.0	210.4	
Total 1993 rodenticides		Acres	62,758.6	454.6	
Grand total 1993 units treated					
		Acre feet	11.0		
		Acres	288,976.9		
		Buildings	1.0		
		Grafts	400.0		
		Greenhouses	35.0		
		Head of cattle	15,800.0		
		Pheromone Traps	40.0		
		Square feet	45,164.0		
		Stream miles	44.5		
		Tree groups	11.0		
		Trees	4,686,842.0		
Grand total pounds			213,726.8		

1/ Pounds of active ingredient, unless other units are indicated. BIU = billion international units.

2/ All very small quantities have been rounded up to .1 pounds.

3/ Registered trademark; no common name.

4/ Bt = *Bacillus thuringiensis*.

F. PESTICIDE-USE, MANAGEMENT AND COORDINATION STRATEGIC PLAN

United States
Department of
Agriculture

Forest
Service

Washington
Office

14th & Independence SW
P.O. Box 96090
Washington, DC 20090-6090
(202) 205-1600

Reply to: 2150/3400

Date: May 25, 1994

Subject: Pesticide-Use Management and Coordination Strategic Plan

To: Regional Foresters, Station Directors, and Area Director

REPLY DUE JUNE 10

Enclosed is a copy of the Pesticide Use, Management and Coordination Strategic Plan. It has been revised to incorporate Staff Directors' comments. The editing had two primary objectives:

- 1.- To align this plan more closely with the Forest Health Strategic Plan to which it is tiered by revising the goals, relocating action items within the various goals, and emphasizing the Washington Office orientation of the plan; and,
2. To edit the format of this plan to conform to the two level structure (Goals and Actions) used in the Forest Health Strategic Plan (and simultaneously eliminate much of the repetition and size which drew negative comment in the previous draft).

As now written this plan is proposed as the Plan for the Washington Office PUM&C Staff, though it may serve as a model for Regional plans.

Please review the Plan and send comments to Jesus Cota (J.COTA:W01C) by close of business Friday, June 10, 1994.

/s/ JESUS A. COTA for
MELVYN J. WEISS
Acting Director
Forest Pest Management

Enclosure

cc:
Jesus A. Cota, WO-FPM
Dave Thomas, WO-FPM

FPM:D.Thomas:nb:05/25/94:205-1600

A STRATEGIC PLAN

USDA Forest Service

Pesticide Use Management and Coordination

USDA Forest Service
State & Private Forestry
Forest Pest Management
Washington, DC

TABLE OF CONTENTS

I. INTRODUCTION

- A. Framework For Planning
- B. PUM&C Purpose Statement
- C. Strategic Goals
- D. Operating Values

II. ENVIRONMENTAL TRENDS AND ISSUES

- A. National Issues
- B. Regulatory Environment
- C. Non-Target Effects
- D. Risks and Benefits

III. STRATEGIC GOALS AND ACTIONS

IV. IMPLEMENTATION

V. REFERENCES

I. INTRODUCTION

A. Framework For Planning

The Pesticide Use, Management and Coordination Staff Group, a group of specialists in the Washington Office (PUM&C) must plan within the framework established by the Forest Service and also within the mission established by the Forest Pest Management staff which is displayed in the guiding document Healthy Forests for America's Future: A Strategic Plan (1). The use and management of forestry pesticides to enhance forest health within the context of ecosystem management presents numerous challenges and opportunities. The PUM&C Staff cooperates with other Forest Service resource staffs such as Range, Timber, and Wildlife, the National Center of Forest Health Management, Forest Service Research Stations, other Federal Agencies, external cooperators and partners, and the general public. The PUM&C Staff provides policies which guide pesticide programs in the Northeastern Area (NA) and the Regions.

The Strategic Plan for Pesticide Use, Management and Coordination is tiered to the Forest Health Strategic Plan (1). Planned PUM&C actions must support and facilitate ecological approaches to management of the National Forests and Grasslands. On these lands forest health is integrated with other ecosystem management considerations by including integrated pest management principles and strategies in the Forest Service's land management planning process.

B. PUM&C Purpose Statement

The purpose of the PUM&C Group is to serve as a national and international focal point for information and technology on the management and use of pesticides in forest and range ecosystems. In serving this purpose, the PUM&C Group provides leadership in the safe, economical, efficacious, scientifically, and environmentally sound management of pesticides used to maintain or improve the health of individual trees, or of forest and range ecosystems.

C. Strategic Goals

To fulfill the functions outlined above, the PUM&C Staff's strategic goals are:

Planning: The potential for pesticide use in ecosystem protection and restoration is considered in forest and range resource management planning processes.

Environmental Analysis: Program-level National Environmental Policy Act (NEPA) documents are available.

Pesticides: Environmentally acceptable pesticides are available to protect forest values and achieve resource management objectives.

Forest Protection Technology: Effective, economical, and environmentally acceptable pesticide application technologies are available to meet forest and range resource management objectives.

International Cooperation in Forest Health Protection: Common interests are identified with other countries and long-term relationships are developed to maintain and protect forest health worldwide.

National Pesticide Use, Management and Coordination Program Monitoring: Monitoring of the NA and Regional pesticide programs is done to evaluate conformance with laws, policies, and guidelines which regulate pesticide activities in the Forest Service.

Internal/External Communication & Coordination: Communication, coordination, and data exchange with other Forest Service staffs, other agencies, and cooperators within State, academic and private sectors is an integral and routine part of all pesticide use projects.

Public Involvement: The public is informed about the role of pesticides in forest and range ecosystem management and accepts and supports measures needed to restore and protect forest and rangeland.

D. Operating Values

The following values will guide the activities of the PUM&C Group:

Partnerships - We value partnerships with cooperators in the international community, States, other federal agencies, academia, and the private sector in working toward the safe and economical use of pesticides.

Environment - We are committed to protecting the environment and its ecosystems.

Professionalism - We take pride in our work and are committed to the pursuit of excellence.

Cooperation - We value the judgements, advice, and cooperation of pesticide coordinators from Regions, Area, and Research Stations and strive to support their needs and activities.

Service - We anticipate and respond to customer and partner needs by providing quality service in a consistent, timely, and coordinated manner.

Teamwork - We maximize our collective talents through team building, cooperation and partnerships based on mutual trust, respect, cooperation, and communication.

Training - We value training that maintains professional skills and a highly qualified productive work force.

II. ENVIRONMENTAL TRENDS AND ISSUES

Predicting future opportunities is the key to strategic planning. Future challenges and expectations form the framework on which any plan is built. As an early step in developing this Strategic Plan, PUM&C conducted a group exercise at the 1992 Annual Pesticide Coordinators' Meeting to determine internal and external factors that would influence our future direction and success (2). Following are some of the trends and issues that are molding the current and future use of pesticides and the activities that should be conducted by the PUM&C Staff Group.

A. National Issues

Ecosystem management, forest productivity, and international trade are national issues that will have a profound influence on PUM&C's future program. The declaration by world leaders to support healthy and productive forests and protect the environment are primary issues that will accelerate PUM&C's participation in world forestry. Forests in this context include all stands of trees from natural stands to plantations, and urban forests. Forest Service responsibility also includes significant acreage of rangeland which is included in this planning effort. Current and future PUM&C issues will be dealt with in the context of cooperation in the formulation of meaningful global responses.

There are several issues and trends that are directly or indirectly related to the use of pesticides in establishing and/or maintaining healthy forests and rangeland. Movement from traditional chemical pesticides to others described as more environmentally acceptable is leading, on an interim basis, to the use of biological pesticides and other low risk pesticides where available. In the future, different, less toxic materials, and less environmentally damaging techniques for forest and range pest prevention and control will be developed. PUM&C needs to change its role from the current product/pest approach to an ecosystem approach consistent with forest health and ecosystem management goals and strategies; to look at pest problems not as isolated situations but as components of larger more complex systems.

B. Regulatory Environment

Public concern about pesticide toxicity, environmental fate, and residue effects on human health and nutrition is resulting in a change in the pesticide regulatory environment. In the current socio-political environment demands are common to reduce risks perceived to be caused by the use of pesticides and to shift regulatory controls towards the registration of "safer", less toxic pesticides. This shift in emphasis favors the (re)registration and use of biological pesticides when they are available. Current legislative proposals seek the establishment of a single registration standard for assessing pesticide risks and benefits and the establishment of a reregistration and review process that requires greater data support. From the standpoint of forest and range-use pesticides, this means that minor use product registrations may be allowed to lapse. These products are commonly supported by narrow toxicological databases, have low profit margins, and manufacturers can't justify the

cost of completing the data requirements for reregistration. A need will exist to search for replacements for the pesticides that are lost, or to fill the data gaps.

C. Non-target Effects

Increasing concern over potential (often undocumented) negative environmental impacts of pesticides is resulting in a decrease in pesticide use in forest and range management. The shift from single species management to more holistic or ecologically based management requires that non-target effects be observed and analyzed. In order to address this concern, PUM&C will place emphasis on pesticides and application methods that are more target specific; those considered to pose less risk and to be more environmentally acceptable because they do not affect a broad spectrum of organisms. More information on risks, environmental impacts and effects on non-target species will be demanded by environmental organizations and the public.

D. Risks and Benefits

Current sentiment (both internal and external) categorizes forest and range pesticide use as a greater threat to human and environmental health than warranted by the actual hazards posed. Although risks presented by these pesticides are normally significantly less than other public health hazards, society places these compounds in a special high-fear, presumed high-risk category. The general perception is that benefits accruing from the use of forest and range pesticides are very low. More information is needed on the potential impacts, risks, and benefits derived from forest and range pesticide use. Data gaps will continue to need to be filled, and risk assessments will need to evolve into more comprehensive, technical documents. Adequate (and appropriately formatted) communication of pesticide use risk/benefit to resource managers and the general public will continue to be essential.

III. STRATEGIC GOALS AND ACTIONS

This section of the plan sets forth the Forest Service's strategic goals for the management, use, and coordination of pesticide activities by the PUM&C Staff in the Washington Office. Eight strategic goals have been identified. Each goal is a statement of ultimate desired condition supported by a rationale that explains the basis for the goal. Actions to achieve the goal are proposed after the rationale.

The eight strategic goals address planning, environmental analysis, pesticides, forest protection technology, international cooperation in pesticide use and management, public involvement, monitoring pesticide use programs, and internal/external communication and coordination. The first six goals are similar to (though restricted to PUM&C) goal statements in Healthy Forests for America's Future; the last two goals are new to this plan. Actions in the current plan are those expected to be accomplished by PUM&C within the next

five years. The Plan is flexible; changing opportunities or priorities can be readily added as needed.

Due to current W.O. staffing constraints and the exclusion of Regional/Area action items, a few of the actions identified in the Salt Lake City session are not included in this Strategic Plan.

Planning

Goal: The potential for pesticide use in ecosystem protection and restoration is considered in forest and range resource management planning processes.

Rationale: Failure to use pesticides can result in failure to achieve management objectives and the creation of new problems which are difficult and expensive to correct. Forest Pest Management (FPM) pesticide use coordination is often reactive and time sensitive, focusing on what is to be done after a pest problem occurs. However, to fulfill NEPA requirements, significant analytic documentation must be in place to allow a timely response to problems. Planning forms the necessary link between the theoretical understanding of ecosystems (environmental analyses) and the pragmatic application of that knowledge (site specific project use of integrated pest management (IPM) which may include pesticide use).

Actions: The following actions should be taken to ensure that the potential role of pesticides is included in resource management planning processes.

Review and update national PUM&C policy and role. Review and update the Forest Service Manual and Forest Service Handbook sections which apply to PUM&C program areas.

Develop the PUM&C role in ecosystem management processes. Participate on ecosystem related task forces, teams, and committees which are developing ecosystem management policy and process; develop guidance concerning the PUM&C staff role in ecosystem management; and, define FPM's PUM&C role in vegetation management under existing authorities and incorporate it in the FS Manual and Handbook.

Environmental Analysis

Goal: Program-level NEPA documents are available.

Rationale: Forest and range pesticide activities require supporting environmental analyses. Conducting these (NEPA) analyses on a planned basis allows for the systematic preparation of the best possible documentation and avoids higher costs incurred when analysis is done on an emergency basis. Planned, proactive analysis allows for the implementation of rapid field response (suppression activities) against threatening populations of pests, and for more timely vegetation management activities. Planned, orderly preparation of NEPA documentation also facilitates early and effective communication with the public.

PUM&C will work closely with the National Center for Forest Health in this effort. The Center will have the lead in the development and accumulation of data related to the effects of biological and biorational pesticides while the PUM&C Staff will have that responsibility for all other pesticides.

Actions: The following actions should be taken to make program level NEPA documents available and keep them current.

Establish external contracting support to develop and update risk assessment and related documents. Coordinate the generation and maintenance of all pesticide background documents, risk assessments, risk management, and related scientific decision support documents.

Coordinate PUM&C access to pesticide information data bases and computer models. Ensure that the WO, Regions, and the NA have access to external computerized data bases which contain current human, wildlife, and environmental (toxicological and ecological) risk information, current regulatory status of pesticides, and those containing other pesticide-related data; and provide expertise to support the integration of pesticide application and environmental fate models.

Develop and implement a strategy for evaluating the effects of non-biological/biorational pesticides on non-target species. Coordinate an interregional FS effort to summarize available information concerning the effects of non-biological/biorational pesticides on non-target species; support Regions, the NA, and Stations to develop regional, interregional, and interagency studies to address questions relating to those effects.

Pesticides

Goal: Environmentally acceptable pesticides are available to protect forest values and achieve resource management objectives.

Rationale: Because the demand for forestry and range pesticides is small in relation to the overall market, and because annual registration fees and the reregistration process have caused a significant increase in the cost of maintaining product registrations, commercial producers of pesticides are reluctant to address the development and registration of additional environmentally acceptable pesticides for our market. PUM&C has a role in maintaining the registration of some of these useful but low-use products.

The use of pesticides will continue to be challenged, particularly when information about environmental effects is lacking, or when substantial environmental risk exists. There is a continuing need to develop low-risk pesticides and low-risk application systems for use in forest and range management.

As envisioned in this Plan, the National Center of Forest Health Management will take the lead for generating and maintaining data concerning biorational and biological pesticides while PUM&C will take the lead in the registration of biological and biorational pesticides available for operational use.

Actions: The following actions should be taken to ensure that environmentally acceptable pesticides are available to meet resource management objectives.

Develop procedures to identify and monitor the generation of needed forest and range-use pesticide (re)registration data. Coordinate the FS effort to identify present and future pesticide data needs; develop with cooperating agencies a plan that lists product (re)registration needs and actions to be taken to ensure (re)registration (specifying agency responsible, target outputs and dates); develop and implement a process for managing (re)registration data, and for tracking its delivery to EPA; cooperate with industry to provide or facilitate the generation of needed (re)registration data; and support studies which may generate data advancing the development and (re)registration of low-risk pesticides.

Forest Protection Technology

Goal: Effective, economical, and environmentally acceptable pesticide application technologies are available to meet forest and range resource management objectives.

Rationale: A significant time lag often exists for implementing newly developed technology. There is a continuing need for development and evaluation of environmentally acceptable integrated pest management technologies which include pesticides as one of the potential tools.

Actions: The following actions should be taken to enhance scientific understanding, development, and application of appropriate pesticide-use technology.

Provide a focus for the preparation, maintenance and distribution of current information related to pesticide technology. Catalogue "unpublished" or low distribution pesticide application technology (tools and models) and related reports, publications, and other papers for inclusion in the national FS-INFO system; create a library of these items at MAG in Fort Collins in conjunction with the Rocky Mountain Forest and Range Experiment Station Library; periodically publish "Short Subjects and Timely Tips" and an application model newsletter; issue Pesticide Use Advisory Memoranda as necessary to provide regulatory, technical, and scientific information to Forest Service units and cooperators; and coordinate the preparation and distribution of technology development reports, pesticide information reports, steering committee reports, and contractor reports.

Continue participation in the National Agricultural Pesticide Impact Assessment Program (NAPIAP) as a means of actively supporting research to fill current data gaps. Serve on the USDA core team for the NAPIAP program; coordinate NAPIAP responsibilities with other staffs and agencies; coordinate annual FS/NAPIAP project proposal submission protocols, annual call letter, evaluation of proposals, award of project funding, and annual reporting process; encourage the field to diligently seek new partners and cooperators; provide an annual report to FS pesticide coordinators and cooperators that highlights accomplishments of NAPIAP studies; and distribute NAPIAP studies (or summaries) to pesticide coordinators and cooperators as appropriate.

Strengthen professional skills and experience through increased inter-office contact. Coordinate a written reevaluation of the use of field level specialists as multiregional specialists with interregional responsibility for specific facets of the pesticide management and coordination role; develop and offer WO/FPM detail opportunities to pesticide coordinators and other national FPM personnel.

Identify forest and range-use pesticide technology needs and incorporate solution-finding actions into PUM&C planning. Coordinate with national steering committees to identify and establish priorities for filling PUM&C technology needs; and coordinate the calibration of existing pesticide application and risk models to ensure/enhance accuracy.

Ensure adequate training is available to maintain PUM&C professionalism and ensure the availability of leading edge technology. Prepare a written evaluation of the need for national level pesticide use training, including the evaluation of specific content needs of national, regional, and area PUM&C staffs and international cooperators (such as risk assessment, risk communications, risk management, pesticide application and environmental fate modeling, toxicology modeling, and other subjects which need periodic updating); and assist in Regional, Area or Station training programs as needed.

International Cooperation in Pesticide Use & Management

Goal: Common interests are identified with other countries, and long-term relationships are developed to maintain and protect forest health worldwide.

Rationale: The processes of pesticide use, management, and coordination presents strong opportunities for international cooperation. Increasing scientific and technological exchanges with other countries should help ensure that operational technologies in support of these activities are shared to the mutual benefit of the Forest Service and its international cooperators.

Actions: The following actions should be taken to improve international cooperation in PUM&C.

Develop and implement an action plan to support international cooperation on issues of mutual interest in the management and use of pesticides. Prepare a position paper on needs and opportunities to form partnerships with international cooperators to strengthen science and technology exchange concerning forest and range pesticide use, management, and training; develop a process for prioritizing potential interaction with international cooperators; and establish liaison with selected countries.

Monitor National Pesticide Use, Management and Coordination Program

Goal: Monitoring of the NA and Regional pesticide programs is done to evaluate conformance with laws, policies, and guidelines which regulate pesticide activities in the Forest Service.

Rationale: Pesticide use on National Forests and Grasslands is a highly visible, controversial program. Historically the national pum&c program has

been accountable through reports filed on the FS2100-1 form. This form has made possible an annual report available internally and to the public; while factual, it is boring reading and does not clearly reflect the improvements in risk management made in the pum&c program; it displays only actual usage. While this information is helpful in understanding what has been used, further data regarding efficacy of the treatment, non-target effects, or other environmental effects needs to be available to decisionmakers and the public.

Actions: The following actions should be taken to monitor pesticide use and effectiveness in forest and range ecosystems.

Provide guidance to and review of Regional PUM&C programs. Prepare a pesticide coordinator's guideline booklet that provides information on roles, functions, and duties of pesticide coordinators; develop a protocol for organizing pesticide use management reviews; conduct Area/Regional pesticide use reviews or functional assistance trips (one or two per year); develop an integrated electronic reporting system to replace the current 2100-1 system; and publish an Annual Report of PUM&C Accomplishments in a readable, informative format.

Coordinate the development of example Standard Operating Procedures (SOPs) for monitoring pesticide effects in forest and range environments. Form a team of experts and develop or identify useable national standard SOPs for monitoring both on and off-site effects of pesticides used in forest and range ecosystems (including [but not limited to] SOPs for monitoring soils, water, plant communities [target and non-target], and animal/insect communities [target and non-target]); and develop example sampling plans which detail appropriate implementation of the SOPs.

Monitor legislative programs to identify new federal initiatives which may affect the pum&c program nationwide. Monitor the development of Federal laws, rules, and guidelines which affect pum&c activities and alert Staff Directors (FPM, FH, and Research) of any changes affecting their pum&c activities.

Internal/External Communication & Coordination

Goal: Communication, coordination, and data exchange with other Forest Service staffs, other agencies, and cooperators within State, academic and private sectors is an integral and routine part of all pesticide use projects.

Rationale: Many Forest Service actions affect and are affected by other Federal Agencies. Projects involving the aerial application of pesticides, projects in areas which potentially have T&E species populations or include potential historic sites, areas which have the potential for runoff or subsurface movement into public water resources, etc., require special review within the agency and often require inter-agency concurrence before the project may be implemented. New rules, regulations, and standards are constantly being promulgated by a variety of internal staffs and external agencies. We must be aware of changes which directly or indirectly affect our programs since the new guidance often carries with it severe penalties for non-compliance. The best way to ensure that we are current in our regulatory interpretations is to maintain strong lines of communication and regular interaction with personnel in other staffs or agencies.

Actions: The following actions should be taken to improve coordination of the Forest Service's PUM&C activities.

Identify ourselves. Semi-annually update and distribute a roster of Forest Service pesticide coordinators.

Strengthen existing partnerships and form new ones when appropriate. Maintain communications and coordinate policy with other WO staff units, NA, Regions, Stations, PUM&C-WO cooperators and international partners; strengthen one-on-one relationships with EPA, APHIS, and FWS personnel. Schedule meetings on a regular basis to discuss and coordinate responses to issues of mutual interest; evaluate existing MOU's with FWS, APHIS, and EPA, update, and prepare others that are needed; and ensure the Director of FPM is kept abreast of pesticide management and coordination needs which might be filled through action to be taken by the National Center of Forest Health Management and the Missoula Equipment Development Center.

Conduct annual PUM&C meetings to coordinate activities and share information concerning current pesticide related issues and technology. Conduct an annual national PUM&C meeting, which includes other resource areas in NFS, S&PF, Research, and external working partners and cooperators.

Develop a prioritized list of PUM&C research needs through active outreach. Develop a single list of research needs based on input from national steering committee reports and input from other meetings, staffs, cooperators, partners, and the general public; and ensure the list of needs is prioritized from a national perspective.

Use existing meetings and publications to communicate with the professional community. Encourage PUM&C professionals at all levels to organize technical sessions at regional and national meetings, workshops, seminars, and conferences that focus on Forest Service pesticide (and technology) use and needs; and encourage professionals to publish in peer reviewed journals as the author or co-author.

Public Involvement:

Goal: The public is informed about the role of pesticides in forest and range ecosystem management, and accepts and supports measures needed to restore and protect forest and rangeland.

Rationale: Pesticide use is a potential significant factor affecting forest ecosystems. Proposals to use pesticides to manage forest or range ecosystems often elicits strong negative public reaction. Public involvement in decisionmaking is highly desirable and needs to be fostered.

The Forest Service has been in a reactive mode with respect to providing information concerning pesticide issues. In the absence of information provided by the Forest Service, various media sources have, at times, provided incomplete or inaccurate information to the public.

Actions: The following actions should be taken to increase interaction with the public on PUM&C issues within an ecosystem management framework.

Provide timely and accurate information on forest and range pesticide issues to the public. Coordinate the production of easily understood fact sheets, technical documents, and other publications which adequately communicate the potential risks and benefits of pesticide use to the public; and working with internal and external cooperators (advertising and public relations persons) determine and disseminate to the field strategies for the communication of risk to the public.

Encourage an active role by the public in considering pesticide-use alternatives for forest and range management. Continue to implement measures which facilitate greater public involvement in planning processes; emphasize the Forest Service intends to consider pesticides for use when managing resources; and emphasize the public has a proactive participatory role in the PUM&C prescriptive/NEPA process.

IV. IMPLEMENTATION

The actions recommended in this strategic plan are necessary to meet the national responsibilities of the PUM&C program. They will strengthen the program's capabilities and enable Forest Service field units and others to meet their resource management objectives in an integrated pest/ecosystem management framework.

Forest Pest Management's PUM&C staff will develop an implementation plan to carry out the actions in this plan.

V. REFERENCES

1. USDA Forest Service. 1993. Healthy Forests for America's Future: A Strategic Plan, MP-1513. Washington, DC.
2. Smith, Mike. 1992. Notes - Strategic planning Session - Pesticide Use Management and Coordination Group, FPM Report 93-4. Prepared under contract by Science Applications International, McLean, VA, for USDA, Forest Service, Washington, DC.

G. MEMBERSHIP OF OTHER STEERING COMMITTEES SPONSORED BY FPM

Technology Development Program
Steering Committee Reports for FY 1994

	Report Title	Chairperson	Summary
1	Appl. of Pesticides 8/93	Jack Barry	Spray Model advisory committee report August 1993
2	Bark Beetle Report 93-94	Iral Ragenovich	BARK BEETLE NEEDS FOR 94
3	Eastern Defoliators '93	Jack Barry	Eastern Defoliators Report for FY94
4	Eastern Disease Report 93	Dan Brown	Eastern Diseases Committee Report for FY 94
5	MIR report 9/93	Patrice Janiga	Modeling, Integrated Systems and Remote Sensing for FY94
6	Seed & Cone Tactical FY94	Jack Barry	Seed and Cone Committee for FY94
7	Western Defoliators 8/93	Jack Barry	Western Defol summary recommendations letter to FPM WO
8	Western Defoliators 9/93	Jack Barry	Western Defol Action items/priorities for tactical planning
9	Western Disease Mtg 5/93	David W. Johnson	WESTERN DISEASE STEERING COMMITTEE MEETING
10	Western Disease Rpt	David W. Johnson	WESTERN DISEASE STEERING COMMITTEE-FINAL REPORT

United States
Department of
Agriculture

Forest
Service

Washington
Office

2121 C Second Street
Davis, CA 95616
PH (916) 551-1715
FAX (916) 757-8383

Reply To: 3400

Date: April 15, 1994

Subject: Membership - National Steering Committees

Updated
July 27, 1994

To: Ross Pywell

This memorandum contains a listing of the National Steering Committees that I administered through the FY 1993 along with committee charters, as I see them, and list of current members as of this date. Note that I no longer chair the gypsy moth committee. There are some minor changes in committee names, charters, and members from previous listings and reporting.

1. National Steering Committee for Management of Gypsy Moth and Eastern Defoliators.

Charter: The committee identifies and recommends to Director, FPM technology development and related needs to support management of European and Asian gypsy moth and eastern defoliators. Note that this committee does not have a chair.

Members: Dave Bridgewater
John Anhold
John Wenz
Mike McManus
Dick Reardon
Sheri Smith
Noel Schneeberger
Dennis Souto
Harry Yates
Jeff Witcosky
Steve Munson
Harold Thistle
Tom Hofacker
Bill Buzzard (State of Pennsylvania)
Win McLane (APHIS)
Leo Cadogen (FPMI Canada)
John Cunningham (FPMI Canada)

2. National Steering Committee for Management of Western Defoliators.

Charter: The committee identifies and recommends to Director, FPM technology development, research, and other needs on both a tactical and strategic basis for management of western defoliators consistent with ecosystem management principles.

Members: Bruce Hostetler
 Dave Rising
 Jesus Cota
 Julie Weatherby
 Roy Mast
 Nancy Campbell
 Dayle Bennett
 Dave Grimble
 John Wenz
 Tom Hofacker
 Sheri Smith
 Dick Reardon
 Leo Cadogen (FPMI Canada)
 John Cunningham (FPMI Canada)
 Ladd Livingston (State of Idaho)
 Jack Barry (Chair)

Jesus asked
 that I resign
 from chairing
 this committee
 so that committee
 no longer has
 a chair

3. National Steering Committee for Management of Seed, Cone, and
 Regeneration Insects.

Charter: The committee identifies and recommends to Director, FPM and to other member organizations, technology development, research, and related needs to support strategies to manage seed, cone, and regeneration insects consistent with ecosystem management principles.

Members: Alex Mangini
 Dave Rising
 John Dale
 Larry Barber
 Ron Overton
 Steven Katovich
 Sandra Kegley
 Christine Niwa
 Gary Debarr
 Jerald Dewey
 John Taylor
 Nancy Rappaport
 Roger Sandquist
 Tom Hofacker
 Dave Overhulser (Dept. of Forestry, OR)
 Tim Schowalter (Oregon State Univ.)
 Scott Cameron (Texas Forest Service)
 Peter deGroot (FPMI Canada)
 Charles Masters (Weyerhaeuser Company)
 Jack Barry (Chair)
 Darrell Ross (Oregon State U.)

4. National Spray Model and Application Technology Steering Committee.

Charter: The committee identifies needs and opportunities to develop and transfer computer-based aerial spray and environmental fate models, and application technologies to support safety, efficacy, economy, effectiveness and environmental acceptability of pesticide use and application. Recommendations are submitted to the Director, FPM and other member organizations.

Members: ~~Dave Rising (MTDC)~~
Harold Thistle (MTDC)
Jim Hadfield (R-6)
Mike McManus (NE)
Dick Reardon (NCFW)
Jeff Witcosky (R-8)
Pat Skyler (WO/FPM)
Larry Barber (R-8)
Alex Mangini (R-8)
Milt Teske (CDI)
Linda Abbott (APHIS)
Terry Biery (USAF Reserve)
Scott Cameron (Texas Forest Service)
Dave Esterly (DuPont)
Bruce Grim (US Army)
Steve Knight (APHIS)
Robert E. Mickle (Environment, Canada)
Dave Miller (Univ. Of Connecticut)
Jim Rafferty (US Army)
Tim Roland (APHIS)
Doug Sommerville (US Army)
Bill Steinke (Univ. of CA, Davis)
Dave Valcore (DOW/Elanco)
Dave Whiteman (Battelle Pacific North West Lab.)
Al Womac (Univ. of Tennessee)
Karl Mierzejewski (Pennsylvania State Univ.)
Ellis Huddleston (New Mexico State Univ.)
Bob Sanderson (New Mexico State Univ.)
Dave Smith (Mississippi State Univ.)
John Ray (FRI, New Zealand)
Brian Richardson (FRI, New Zealand)
Jack Barry (Chair)

Buddy Kirk (ARS, College Station)
Kevin Howard (ARS, Stoneville)

If you have any questions Ross please give me a call.

/s/ John W. Barry

JOHN W. BARRY
Program Manager

cc: J.Cota
N.Lorimer

As of July 29, 1994 the persons considered members of the Modeling,
Integrated Systems and Remote Sensing committee, aka the MIR committee for the
FPM Technology Development Program are as follows:

p.eav:s24108a
a.stage:s22104a
b.tkacz:s28102a
d.drummond:r08f06a
g.mcdonald:s22104a
j.adams:w04a
j.byler:r01a
j.kliejunas:r05a
j.wilson:s28102a
k.gottschalk:s24108a
k.reynolds:r10f04a
c.sheehan:r6/pnw
l.disbrow:r02a
m.twery:s24108a
p.janiga:w04a
t.johnson:w04a
r.pywell:w04a
s.munson:s22102a
s.williams:w04a
t.shaw:s28a
w.frament:s24106a

MESSAGE DISPLAY FOR DAVE THOMAS

To Dave Thomas:WO

From: Iral R. Ragenovich:R6/PNW Host: R06C
Postmark: Jul 28,94 8:17 AM Delivered: Jul 28,94 11:20 AM
Status: Previously read
Subject: Reply to a reply: Forwarded: Pheromone exemptions from FIFRA expand

Reply text:

From: Iral R. Ragenovich:R6/PNW
Date: Jul 28,94 8:17 AM
let's see - these are the ones i can remember - i think there are 8:
Vegetation Management Steering Committee - Dave Thomas
Gypsy Moth and Eastern Defoliators - Jack Barry
Western Defoliators - Jack Barry
Seed and Cone and Regeneration - Jack Barry
Eastern Diseases - Dan Brown
Western Diseases - Dave Johnson
Bark Beetles - Iral Ragenovich
Modeling, Integrated Systems, and Remote Sensing - Patrice Janiga

Preceding message:

From: Dave Thomas:WO
Date: Jul 27,94 11:23 AM
Iral - I am preparing a response to your question. On another matter, previously, you had sent me a list of all of the steering committees with their chairs. Do you still have that list. I want to develop a complete directory of all steering committee, chairs and membership. This is a result of the National Vegetation Management Steering Committee meeting recently held in Phoenix. Many thanks! Jack, could you send me a copy of the members of your three committees. Thanks!

From: I.RAGENOVICH:R06C
Date: Jul 26,94 7:59 AM
as i read the ruling, the expanded eup is for "certain biological pesticides"...which "include arthropod pheromones". it then goes on to define "biochemical" and "semiochemical", and then describes "a pheromone as a subclass of semiochemicals and is defined as a chemical produced by an arthropod that modifies the behavior of individuals of the same species". the eup then refers only to arthropod pheromones in the text, so i infer that this determination refers only to those compound produced by the insects, and none of

-----X-----

National Bark Beetle Steering Committee

Chair: Iral Ragenovich

WO	Tom Hofacker	WO	Bob Bridges
WO	Dave Thomas	PSW	Pat Shea*
R1	Ken Gibson*	PNW	Lonnie Sower*
R2	Bernie Raimo*	PNW	Skeeter Werner
R3	Dayle Bennett*	PNW	Gary Daterman
R3	Jill Wilson	RM	Jose Negron*
R3	Mark Schultz	INT	Jesse Logan*
R4	Steve Munson	SE	Jane Hayes*
R4	Ralph Thier*	NC	Bob Haack
R5	John Wenz*	IDL	Ladd Livingston
- R6	Dave Bridgwater*	OSU	Darrell Ross
R8	Wes Nettleton*		
NA	Dan Kucera		
R10	Ed Holsten*		

* voting member for Technology Development Program

MESSAGE DISPLAY FOR DAVE THOMAS

To D.THOMAS:W01C

From: David W. Johnson:R02A

Postmark: Sep 07,94 9:58 AM

Delivered: Sep 07,94 11:59 AM

Status: Previously read

Subject: Forwarded: Contents of mailing list: WDSC

Comments:

From: David W. Johnson:R02A

Date: Sep 07,94 9:58 AM

Dave, mailing list for the Western Diseases Steering Committee.

Message:

From: Post Office

Date: Sep 07,94 9:53 AM

Mailing list name: WDSC

Used by: - David W. Johnson

Addressees on this list:

C.PARKS:S26L06A

D.BENNETT:R03A

D.BROWN:R08A

D.CONKLIN:R03A

G.DENITTO:R05F14A

G.FILIP:S26L05A

G.MCDONALD:S22L04A

IDL.BPF:R01F04A

J.BEATTY:R06C

J.BYLER:R01A

J.KLIEJUNAS:R05A

L.LAMADELEINE:S22L02A

M.FAIRWEATHER:S28L02A

P.HENNON:R10A

R.SMITH:W01C

J.HOFFMAN:R04F02A

T.SHAW:S28A

V.THIES:S26L05A

JIM HUBBARD

F.BAKER:S22L06A

R.WILLIAMS:R04F02A

-----X-----

NATIONAL AGRICULTURAL LIBRARY



1023166576